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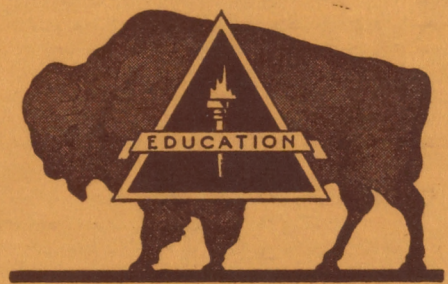


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Editorial

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The present issue of the Faculty of Education Research Bulletin exhibits two important characteristics which represent a slight change in policy. The material has much greater emphasis on research and the bulletin includes contributions from workers outside Manitoba. This development is in keeping with educational progress in Western Canada which in its turn has also exhibited two welcome characteristics. There is a notable increase of interest in research in all the Education Faculties and there is a growing tendency for friendly co-operation amongst teacher educators. All this points to a notable improvement in the quality of work in our training institutions, and to the growth of a distinctive Canadian philosophy of education.

It is not unnatural that this development should follow on the heels of two very significant annual conferences which are doing much to spur progress in the West. The Western Canada Student-Teacher Conference has been an annual event for several years but the value of such a conference and the significance of its resolutions have not been fully realised until recently. The Western Canada Conference on Teacher Education got off to a flying start during its first annual meeting in May, 1953, owing to the superb efforts of Dr. Tait of Regina and Dr. Doucette of Calgary. The success of such a convention developed a bond of friendship and mutual understanding which bodes well for the future.

We can look forward to increased collaboration through Western Canada and perhaps to the eventual establishment of a Western Canadian Educational Research Journal. Until that time comes we hope that this bulletin, which is at present distributed freely through the generosity of the Board of Governors of the University of Manitoba, may serve as one outlet for reporting research work in education.

SOME ETHICAL ISSUES OF OUR TIME

DEAN N. V. SCARFE



In recent times there has been a growing volume of comment complaining of ethical and moral laxity in society generally and among young people particularly. This healthy concern with the ethical welfare of the nation is all to the good, for it shows that people would like to understand the causes, if any, of the alleged falling off in standards, and, in addition, would like to plan an educational system which would ensure that standards of behaviour and qualities of character are not merely maintained but are improved. Most people are convinced that even if things are well with us, it is still necessary to improve our civilisation and to raise still higher the standards of morals and ethics. The forces working against such an improvement are, however, greater now than ever before. It is the purpose of this article to try to analyse some of these forces.

At the outset it is important to dispel any sentimental wish to return to the "good old times". The great technical advances of modern times cannot be cast away or denied. Society is better in many, many ways than it was fifty or a hundred years ago, but changes for the good sometimes bring with them concomitant evils. In India advances in medical science, sanitation and pest control have extended the expectation of life very considerably. People are now healthier, and fewer die in childhood. The result is that population increases have been phenomenally greater in India in recent years than previously, and so famine and starvation are far greater dangers than ever before. In the realm of scientific research it is often found that successful methods of reducing one insect pest may bring in its wake the increase in another evil which the first insect successfully kept in control.

In the same way the invention of the automobile, the construction of black-top roads, the development of the aeroplane, of the telephone, of radio, of the cinema and of television have proved enormous boons. At the same time they have brought some insidious and unsuspected social evils. The method of dealing with these evils, however, is not to return to the "good old days" but to readjust our educational system, social customs and personal ethics, to take advantages of our gains and to mitigate the concomitant evils.

The major morality of the old days was the will to work. It involved a conviction that serious work rightly and justly came before frivolous play. It stressed the strength of character which could exercise self-control, and could accept austerity willingly in order to achieve worthy goals. It gave pride of place to those who could be happy and content within themselves; to whom working alone and playing alone had few

horrors. Children who could amuse themselves and find satisfaction in self-devised constructive play and hobbies were those who found special favour with adults, and who found lasting happiness. Contentment, self-realisation in the best sense of that term, and freedom through discipline were advocated and were apparently rewarding.

It is, however, important to point out that the people in the "good old days" were not necessarily moral by conviction, they were often moral by compulsion. There were none of the many attractive temptations with which modern youth has to contend. Means of communication were poor. People had to find their own pleasures and satisfactions at home. They had to invent their own games or pastimes. They had to be creative and constructive. They had to be contented with what they had. They had to be moral. There were fewer labour saving devices, there was much less leisure and so work had to come first. There was virtue in necessity. Thus people were not potentially better ethically or morally then than they are now. It is merely very much more difficult for us to be moral and ethical now than it was for those who lived in days gone by.

If compulsion is no longer operative we must now rely more and more on conviction. This requires education. Thus the educator has very special interests and responsibilities in the ethical problems of our time. He has the very heavy task of educating folk to resist temptation by internal conviction and self-control rather than by economic necessity imposed from outside.

Three great characteristics of our time seem, however, to militate against the growth of high quality ethics and morals and against educational efforts designed to maintain moral standards through conviction. The first is the labour-saving device which tends to make us all physically, mentally and morally lazy. The second is the vast increase in passive amusement which leaves us without personal contentment or serenity and without personal resources for happiness. The third is the gross over-emphasis on socialisation of life which tends to deny us personal freedom and so prevents us developing personal resources and strength sufficient to resist the evils of our time. Let us deal with each of these in turn.

One of the great reasons why modern life has become much better for Canadians than it was for the original Indians is that man has successfully harnessed the latent power of nature. Power driven machines have given us enormous control over our environment. We can produce far more per person than ever before and so our material standards of living are immensely improved. This is all to the good. The saving of physical labour raises us from barbarism and gives us leisure to make life richer and better. Leisure, however, can be frittered away without improving life, morals or physique, whether in a passive or active way; it can even be used in harmful ways. The important point here, however, is that it can also be used to do better things, to improve the person and to improve civilised life. The last use, however, requires the use of the effort saved by mechanical devices.

Labour-saving which is merely and solely a way of avoiding useful effort is one thing; labour-saving which is a method of avoiding harsher physical effort in order to have energy left for higher quality physical and mental performance is another. There can be no doubt about which is the more desirable method of using leisure. There can also be little doubt about the human tendency to use leisure either to avoid diligent effort altogether or to use it as a temporary expedient for indulging the baser passions. These frailties are understandable and essentially human.

The important conclusion, however, is not to decry humans in their misuse of leisure, but to decry the increasing acceptance of attempts to carry over the idea of the labour-saving device, with its desire to avoid effort, from the physical to the mental and moral side of life. Labour-saving devices are not normally applicable to mental and moral processes. There is no way of getting to know how to read and write except through the expenditure of roughly the same amount of effort as has always been necessary. There is no way of learning or mastering the principles involved in jet propulsion except through considerable mental effort. There is no way of keeping honest except through the exercise of strict self-control. There is no mechanical device which saves the effort of exercising will power. Labour-saving applies to physical labour much more than to mental effort. Those who try to get round this mental effort or try to "get by" with a minimum are in fact cheating themselves. They are not getting the same value as those who make the sincere intellectual effort. Morality too requires great self-control and there is no easy way. It is true that good teachers with interesting methods make mental effort more palatable and more efficient, but they do not save effort to any large extent. There is no machine which will think for us or keep us sincere.

It would be well, therefore, if our schools emphasised that labour-saving devices are a means of providing more time for mental effort, and more time for the pursuits of truth, beauty and goodness rather than for frivolous fun. It may be necessary to spend some leisure time on pure pastime pleasures such as light amusement or spectator entertainment. We all need some relaxation. There is also a great need for complete and calm rest and reflection. In this day and age, however, it is much more important to emphasise good use of leisure in the constructive and creative enrichment of the personal inner life. The days of home crafts and family hobbies, of dressmaking and gardening, of music making and painting, of good conversation and fine letter writing are apparently over. It is to be hoped that the contentment and satisfaction that such occupations bring, and the moral and mental enrichment attached thereto are not also things of the past.

Turning now to the social aspects of life it has been facetiously said that this is the era when homes have become increasingly places merely to sleep in, to eat breakfast in and to be ill in. Many parents go out to work by day and to parties and meetings by night. Children are cared for by teachers, neighbours, baby sitters, doctors. The calm serene stability of a home where parents live, play and work with their

children and thereby hand on by example an effective ethic of life is no longer universal. Children are, it is true, given everything except personal care by parents. They are indulged with money and with almost anything they ask for. They are often given more freedom and responsibility than they can adequately manage. Some parents seem to think that all the child training and care can be bought from school, community centre and church, from doctor, dentist and clinic. They find themselves too busy to attend adequately to home life, just when children need more care than ever before. There are too many amusing social and community things to share in. It seems important to be in the fray, in the social whirl. The outside attractions are so many, the number of community groups to which one should belong so multifarious that life becomes one of high nervous tension. People become restless, unsettled and unsatisfied. Such things as serenity, calmness, personal contentment, and quiet contemplation are out of place for they would tend to leave one at home in a backwater of eccentricity.

Passive group entertainment at ball-games, at the theatre, on the open road, at parties, on the radio and television, all militate against the constructive and creative use of leisure for increased mental effort, and do not necessarily improve ethical or moral behaviour, especially for children.

The over-emphasis on the importance of social life, on becoming a good mixer, on the need for social approval, on the need for developing a group spirit, on the importance of fitting future citizens for community living, tends to crowd out the importance of each individual's personal worth. The child who can amuse himself or wishes to play alone or who likes to study wild life in the country is thought to be a social misfit and peculiar. It seems much more important to be the member of a gang, a community club, a guild, a football team or an orchestra. Distinctive individual differences, however desirable, tend to be crushed. Conformity is favoured. Those with an average or mediocre morality and mentality rule, while the brilliant child or highly moral boy is laughed to scorn.

Just as the morals and behaviour of a mob tend to adjust to those of the lowest in the mob, so the over-emphasis on group conformity rather than on personal excellence tends to reduce ethical standards and intellectual standards. Progress in the world has always depended on the excellence of distinguished leaders, and on the distinctive efforts of free individuals. Masses have always lagged behind waiting for leadership.

The over-emphasis on social virtues tends, of course, towards fascism or communism, which mean a lack of respect for property and for persons and in the end a lack of respect for the dignity of work and labour. When personal freedom is lost, democracy ceases. In the same way democracy fades when too much reliance is put on social legislation rather than on individual conscience in the maintenance of law and order.

Another result of over-socialisation is the tendency on the part of those in power or authority, whether in business or in governmental

services, to mistrust all humanity simply because a few may be untrustworthy or even criminal. Of course, the spirit of our legal profession is against that outlook on life for no one is guilty until proved to be so. Despite this laudable legal faith in the general decency and dignity of most humans there is among other walks of life an unfortunate tendency to suspect all people of base intentions until better ones are proven. This attitude holds sway in spite of the fact that there is no surer way of turning a good person into a bad one than by treating him as if he were bad. There is equally no surer way of encouraging children to cheat than by assuming that they are bound to cheat when in fact they have no such intentions. There is no surer way of developing an unruly class than of treating them as if they were unco-operative and of malicious intent from the beginning. There is no surer way of keeping teachers incompetent than by treating them as if inefficient. Too much direction in curriculum, and in method, too much supervision and inspection, however kindly in purpose, implies lack of faith on the part of the administrator in the competence of the teacher, and damps the ardour of all teachers to improve themselves.

Mutual distrust of this sort, however, begins in the school. Instead of assuming that the vast mass of humanity is honest, decent, hard-working and friendly, teachers sometimes treat children harshly and unjustly. The result is that school becomes a battle where children try to outwit the teacher and to do as little as possible, and where the teacher sets up all sorts of rules and punishments which catch innocent more often than guilty. There is also the terribly iniquitous system whereby a whole class suffers for the misdemeanours of a few. Thus all soon feel there is no point in good behaviour for any.

No doubt some teachers adopt this attitude because they themselves have been treated in like manner. It has been a long hard fight to gain security of tenure. There are still clauses requiring teachers to do this or that for continuance of tenure. Curricula are still rigidly controlled. There are still many examples of regulations which are all tantamount to saying that the teacher cannot be trusted. This goes on in spite of the fact that a democracy requires maximum freedom for individuals and implies great faith in human dignity. Democracy also relies on individual human conscience not on group force for its success.

If any parts of these arguments are true, and clearly they cannot in any sense be wholly true, it still behoves educators to do something about them. Obviously parents should be educated to see that children nowadays need far more not less parental time, care and attention in the home than ever before if they are to withstand the multifarious temptations of our age. This type of education can often be done effectively through Parent-Teacher Association meetings, though unfortunately these have occasionally resulted in parents trying to guide, rule or push the teachers rather than in mutual cooperation.

In addition, schools and parents could do a great deal to influence children against mob rule and group conformity. Children can be trained to be critical of the massive impact of radio, press and movie on their emotions. They can be taught to beware of propaganda in politics or in commercial advertising. They can be encouraged to develop their own distinctive gifts to the utmost. Each can be proud

to be different, and therefore likely to respect difference in others. Moreover there must be greater emphasis given to constructive and creative hobbies, to art, music and handwork, and to active ways of learning all subjects. Individual distinction as well as group cooperation must be encouraged.

Schools must, of course, still give priority to the task for which they are best fitted — intellectual training. Those who think for themselves must be given pride of place, while those who indulge in mental or moral indolence should be persuaded otherwise. Schools would do well to encourage each to develop the highest quality of personality he can. Intelligent social development is by no means unimportant but it is secondary to individual development as far as school training is concerned. Over-emphasis on social aspects of life merely lead to mental slavery and moral mediocrity. On the contrary completely to ignore social growth would simply result in anarchy and general dissatisfaction.

It is very true that we need good citizens but a good citizen need not necessarily be defined as one who takes a continuously active part in community life, who runs youth centres, organises charity drives, serves on the school board, or supports discussion forums. Leisure time social service of this kind is sometimes a way of salving a conscience guilty of ruthless competitive exploitation during a day's work. Good citizens can also be defined as those who think of their daily work as social service rather than as gainful employment. More social cooperation between employer and employed, between producer and consumer, would be all to the good.

In leisure time it is not inconsistent with good citizenship to stay at home in order to help our children — our future citizens — to face this difficult life. It is not inconsistent with good citizenship to sit at home with a book thinking quietly through the problems of our time so that one may vote wisely. The organisation of our public life has inevitably to be left mainly in the hands of our elected leaders. The greatest function of a democratic citizen is to choose wisely when voting. To do this the voter and the elected member must resist pressure groups, special pleading, political campaigning, and vested interests. In order to do that each man must be free within himself from group pressures and special community interests. The voting decision must be made as a result of undiluted intellectual effort, critical thought and mental conviction. Groups and mobs tend to act solely on our baser passions and irrational emotions; they rarely appeal to the intellect.

A good citizen can be defined as an individual who has disciplined himself to the highest moral standards of which he is capable. He has a fine upright character, with kindly sympathy for his fellow men. He does not necessarily have to agree with them or conform to their wishes. He has to be independent with a wealth of personal resources in his mind.

Let us now consider the home. This is by far the best place in which to acquire morals and ethics. Truth, beauty, honesty, trustworthiness are the enduring permanent virtues which it is the special function of home to preserve to the utmost. Homes, therefore, must be conservative

in tenor, offering a sense of security, permanence and strength. The family morality must remain the same enduring source of high standards and disciplined behaviour as it was in the past. The home must not be irresponsible; it cannot shirk its high duty of giving firm guidance, of curbing antisocial behaviour, of encouraging manners and courtesy. Licence, laxity and arrogance ill befit a home.

By exercising firm, persistent but not harsh, brutal or strict control, and by acting in a kindly, understanding, consistent but quite decided way, parents can greatly aid the school and relieve it of the burden of trying to do what the home should do. Schools cannot give the essential love, security, and individual attention that homes can. Moreover the intimate personal things such as sex, religion and morality cannot be as ably done at school as at home, unless the school is a very high grade residential school.

If homes will maintain the traditional high standards of honesty, truth, beauty, manners and courtesy, parents can rely on schools to do their utmost to support such efforts. The teachers would also be freed to attend to duties for which schools are specially fitted.

Schools, on the other hand, are primarily for intellectual adventure. Instead of being conservative, like homes, they must be creative, experimental, advancing, so that future citizens can be trained to deal with the great problems that may face them in the future. The great virtues learned in the home have been known for centuries, but the frontiers of knowledge studied at school are continually advancing.

It is not difficult for any home, however humble, to grasp what is good conduct. Over 1900 years ago we were told that consideration for others, "do as you would be done by", and humility were worthy modes of conduct. We have no evidence to show that those great virtues are any less true or any less desirable today. In the same great message we were told not only that each individual mattered but that each individual was responsible for his own actions and salvation. These permanent things are best learned at home. They are not easily taught by direct action, they are "caught" from the constant example of intimate and respected adults.

Compared with the learning acquired in family life, work in schools, as we know it, is a relatively recent innovation by which society hopes to put future citizens wise to the ever increasing complexity of life. This does not mean that schools are merely knowledge shops and teachers information mongers. Children must be able to face future problems courageously and so schools must also nourish, support and complement the great individual and social virtues fostered by the home. Schools, however, are primarily for training children to think, for fostering the mental growth of each individual. This is not done efficiently by ancient, formal or conservative methods. Intellectual learning is adventurous, experimental, active, exciting. It requires much effort and concentration. It encourages disciplined attention for the attainment of interesting goals.

A slight diversion on the problem of discipline will help to throw light on the main theme. The subjects of the curriculum in days gone by were called disciplines, not because their content was fixed but

because they required careful and diligent attention to the matter in hand and a resistance to distraction by irrelevant or unworthy side issues. In some places these old fashioned subjects have come to be rejected as unsuitable studies in school and very often with their disappearance self-controlled interest and absorption, which were good discipline, have also been lost. What was objectionable in these old fashioned subjects was not their content so much as the way they were taught. Instead of using adventurous, active, experimental, creative methods they were taught in a very conservative deadening way. They still are in some places. So are the new subjects that have supplanted them.

Instead of changing methods in our schools to encourage interest, effort and adventure we changed the content in order to avoid effort and discipline. Our society has, in fact, gone topsy-turvy and allowed children to be creative, experimental, adventurous in morals and behaviour, and has kept methods of learning and intellectual training static, conservative, traditional. Just where we should have been strict and conservative i.e., over behaviour in our homes, we have been all too free and easy. Just where we should have been experimental, i.e. over intellectual pursuits in schools, we have been deadeningly formal. Even when we have been experimental in schools it has been in trying to make work easier and more in keeping with a labour-saving type of mind, not in improving quality which is truly progressive.

The future world will indeed be very challenging; it might therefore seem wise to see that the problems faced in school are also challenging. Children must be trained in methods of solving problems and must be made aware of the methods of dealing with great issues. Such training must be adventurous, experimental, forward looking, and critical. Knowledge, diligent study and profound thought are still essential to any mental or moral progress. We can speed up the process of learning by the use of interesting methods which encourage children to work harder for longer, but there is no way of avoiding the work.

In addition to all this, a higher standard of morality and a finer social conscience in all levels of the business and professional world of work would be of immense help to schools and parents. A corporate and cooperative sense of community interest is fundamental and specially valuable in all day time work activities as well as in leisure time community activities. Away from work a greater concentration on the constructive, artistic and intellectual leisure-time pursuits in the home would not be out of place. Charity, social welfare and community service should be a governmental and national concern, not a means by which individuals salve their consciences nor should they be excuses for getting together in order to avoid the horrible loneliness of an empty soul. Let us be more sociable and cooperative in our work life. Let the morality and humanity of our homes and schools apply in the business world. Let our leisure time be periods of culture for individual development within the family circle. Let our schools train us to think for ourselves and give us enough knowledge to understand and sympathise with other people. Above all let homes preserve the permanent virtues.

APTITUDE AND ACHIEVEMENTS OF FACULTY STUDENTS*

PROFESSOR H. L. STEIN



There is an old cliché, often uttered either jocosely or sarcastically which says, "Those who can, do; those who can't, teach." The implication of this statement is that the ranks of the teaching profession are filled with individuals who, because they cannot make "the grade" in other areas of endeavor, either because of low mental ability or because of poor scholastic achievement, enter the teaching profession where they can function at a fairly acceptable economic and social level, and thus save their face against their academic confreres who enter other professions which are supposedly demanding of higher mental status and academic achievement.

The purpose of this study is to examine the scholastic aptitude and the college achievement of students entering the Faculty of Education with a view to determining (a) whether or not the same general kind of student appears in the Faculty of Education, from year to year, and (b) whether or not these students differ significantly from students in other faculties in these areas of aptitude and achievement. At the same time, we shall examine certain other aspects of the quality and preparation of the people entering this particular teacher training institution.

The data for this paper are derived from the records of the students taking the first year of Education at the University of Manitoba. Any generalizations made are based only on these data but it is believed the students in Education at other Canadian Universities will be of very much the same calibre.

Each year, on entry into the Faculty, the students are given a battery of tests which includes the College edition of the American Council on Education Psychological Examination. As most of you know, this test breaks down into three scores designated as Q (Quantitative), L (Linguistic) and T, (Total Score), the last being a measure of general intelligence. The first hypothesis we wish to test, then, is that there is no significant difference in scholastic aptitude among the various classes as they appear from year to year.

I shall not burden you with all the statistical machinations necessary to establish the truth of any statements we shall make. Suffice it to say that the conclusions we reach are based upon statistical assumptions which must be satisfied before further consideration can be given to the data. For example, before we can consider the

* An address to the Teacher Training Section of the Canadian Education Association Annual Conference, Halifax, Nova Scotia, September 1953.

differences among and between the means of the scores of various classes, we must establish whether or not the differences which exist are due to unequal variability among the classes. To do this we must test the assumption of homogeneity of variance among the classes. This assumption was tested by the method known as the L_1 technique as set out by Neyman & Pearson, (1) and by Welch, (2) and the hypothesis of lack of homogeneity of variance was rejected. The hypothesis that there is no significant difference among the classes from year to year was then tested by the well known method of analysis of variance. The hypothesis of no significant difference was accepted at the 1% level.

Table 1 shows the comparative results of the A.C.E. Psychological Examination for Education 1 students from the year 1946-47 to the year 1952-53. It should be remembered that these students, except for a very small number who have a final year supplemental or two, all have a degree in Arts, or Science or Home Economics. This means, simply, that the students entering the Faculty of Education have a fairly solid liberal arts background and our concern is to determine whether or not they differ significantly from the general run of Arts and Science graduates.

TABLE I
MEANS AND STANDARD DEVIATIONS OF SCORES ON
THE VARIOUS ASPECTS OF THE A.C.E. PSYCHOLOGICAL
EXAMINATION FOR EDUCATION 1 STUDENTS AND OTHERS

CLASS OF	N	L-Score		Q-Score		T-Score		ACE Year
		Mean	S.D.	Mean	S.D.	Mean	S.D.	
1946-47	37	84.8	12.8	48.8	9.0	133.0	18.2	1941
1947-48	51	81.9	16.8	44.1	11.3	125.2	23.8	1945
1948-49	64	78.7	13.3	50.0	8.6	128.8	18.0	1947
1949-50	69	83.0	15.0	47.1	8.2	130.7	23.0	1948
1950-51	83	82.8	16.2	44.9	9.0	127.3	21.5	1949
1951-52	36	83.1	13.5	47.0	8.4	129.4	20.0	1948
1952-53	70	83.2	16.5	48.2	9.4	132.4	22.8	1949
1953 students in other faculties	271	83.2	15.5	48.1	8.9	131.6	21.3	1949
1952-53 Winnipeg Normal School.....	299	61.7	13.7	40.8	13.6	103.4	23.4	1949

In Table I are included also the scores for 271 students at a comparable level in other faculties of the University, and the scores of 299 students of the Winnipeg Normal School. The basis for comparability was that the students in the other faculties had spent about as much time in college as had the education students. The Normal School students are, in the main, students with complete or partial senior matriculation (grade XII) although a very large proportion are in the partially complete class. A number of interesting facts may be observed from Table I. In the first place there is considerable variation in the size of the Education 1 class from year to year. This may mean that interest in Education as a profession varies from year to year or that the vocational situation changes from year to year. In any event, the years 1947-48 to 1951-52 saw many veterans graduate, and that may account for the larger number of entrants into the Faculty in those years.

Again, there is amazing uniformity across the years in mean scores, standard deviation, and ranges. It has been shown statistically that the differences in means and variability from year to year are not significant. This means simply, that the same general type of student, from the point of view of scholastic aptitude as measured by the A.C.E. examination appears in the Faculty of Education from year to year. Furthermore, it is easily seen that these students do not differ significantly from the general run of liberal arts and science students in the trait measured. The general means from 271 comparable level students in other faculties are shown in the second last row of Table 1. A glance at the figures will reveal the truth of the hypothesis of no significant difference.

To show the amount of selection that occurs during a University course, we need only examine the last row of figures in Table 1. These figures are the scores of 299 Normal School students who were given the same examination. These students are, of course, equivalent in some respects to college freshmen, although many of them are carrying incompleted subjects even from grade XI.

During the spring of 1953 the College edition of the A.C.E. Psychological Examination was administered to 271 students of a comparable educational level to the students of the Faculty of Education in Education 1. The means and standard deviations together with the ranking of the means of the scores of the students in the various faculties are shown in Table II.

TABLE II
MEANS, STANDARD DEVIATIONS AND RANKING OF
FACULTIES ON RAW SCORES OF THE A.C.E. PSYCHOLOGICAL EXAMINATION

FACULTY	N	L-Score		Q-Score		T-Score		Rank of Means		
		Mean	S.D.	Mean	S.D.	Mean	S.D.			
Medicine II	58	89.3	8.9	49.9	7.2	139.3	19.4	2	2	1
Arts & Sci. IV & V	39	90.7	11.9	47.8	7.7	138.5	16.6	1	4	2
Engineering III	69	78.3	15.7	50.2	10.1	131.4	23.8	5	1	4
Law II & IV	61	84.3	11.1	45.1	6.9	129.0	18.5	3	7	5
Pharmacy IV	27	77.4	15.4	45.8	10.1	123.3	23.0	6	6	6
Agriculture V	17	71.5	13.9	47.6	7.9	119.5	22.6	7	5	7
Education I	70	83.2	16.5	48.2	9.4	132.4	22.8	4	3	3

If there is any doubt that Education students, our prospective secondary school teachers, are any different from college students in general from the point of view of mental ability, it will be quickly dispelled by an examination of Table II. As you will note, Education ranks fourth, third and third on the respective aspects of the test. It should be noted that Medicine, which ranks first on the total score, and second on each of the other aspects of the test, is made up of students who have been very carefully selected, on the basis of their academic achievement in the first two or three years in Arts and Science. The Arts and Science group tested consisted of fourth year and fifth year (honors) students. There was some selection in that group because the testing was done on a voluntary basis. However, in all the other faculties there was either a random sample or a

complete sample of the students. It should, therefore, be quite evident that Education I students who possess a liberal arts degree are a good cross-section of the University population in general as far as scholastic aptitude is concerned.

One important implication for teacher training should stem from the knowledge of the facts just given. That is, that since in our Faculties of Education we have a fair cross-section of the college population, we should treat them, in our teacher training program, as college graduates. We should be able to present them with a body of basic principles and a philosophy of education, making use of a sound lecture program together with an adequate library to be used as a workshop, a well organized demonstration-teaching program together with a well prepared but not overdone practice-teaching program under the supervision of carefully selected and trained practice-teaching supervisors, and then feel assured that they will go out and put their philosophy and principles into sound practice. It is my feeling that it is possible to underestimate the intellectual capacity of our prospective secondary school teachers by insisting upon a teacher training program overloaded with practice teaching at the expense of the dissemination of a sound philosophy and an adequate foundation in principles and psychology.

Notwithstanding anything that has been said about the intellectual status of our trainees, I do not feel that we should rest on our oars as regards the selection of the best minds for the teaching profession. As far back as 1922, W. B. Bliss, of the State Department of Education, Columbus, Ohio, writing in the *Journal of Educational Research*, said, "Can we afford to develop our education workers out of anything but good materials or can we develop the progressive, growing type otherwise? In an age which demands mental keenness and alertness for any important calling we cannot afford to demean the teaching profession by demanding anything less. It is apparent from this study that our best prospects for success are to be found in individuals of above average mental ability. Therefore, while keeping in mind that we cannot find enough superior people to fill the profession, we can constantly strive to get more and more of this better type. We need not gainsay the merit of the teacher of average ability who possesses to a marked degree many wonderful qualities that enter into the successful teacher's make-up. But we are sure to be wrong if we minimize mental ability, if we expect other qualities to offset its lack, and if we do not stand for the application of some selective process by teacher training institutions. This limited investigation shows that you can expect teaching success to keep pace with mental ability."

We shall now consider the background of academic achievement which Education students bring to their first year in Education, and compare this achievement with that of the general run of liberal Arts students. Table III shows the data from which these comparisons may be made. An examination of this table shows several interesting facts. In the third year of their academic program, Education students exceeded the general run of arts and science students in obtaining averages above the median in three of the five years considered. In

their fourth year, however, they were drawn from the above average group in larger proportions in only two of the five years. The data on the right hand side of the table reveal the fact that education does not draw its rightful proportion of the outstanding students in arts and science, that is, from the top twenty-five percent of the academic achievers.

TABLE III

COMPARISON OF MEDIANS AND SEVENTY-FIFTH PERCENTILES OF AVERAGES OF EDUCATION I STUDENTS AND ARTS AND SCIENCE STUDENTS IN THE THIRD AND FOURTH YEARS OF THEIR ACADEMIC STUDIES

Class	THIRD YEAR			FOURTH YEAR			THIRD YEAR			FOURTH YEAR		
	Educ. Median	Arts & Science Median	% Educ. Above Median	Educ. Median	Arts & Science Median	% Educ. Above Median	Educ. 75% le	Arts & Science 75% le	% Educ. Above	Educ. 75% le	Arts & Science 75% le	% Educ. Above
C	61.8	60.7	55.9	61.1	65.8	34.3	67.2	67.8	24.6	70.2	72.7	13.8
C	61.8	60.7	55.9	61.1	65.8	34.3	67.2	67.8	24.6	70.2	72.7	13.8
D	59.2	61.7	36.4	61.8	64.9	36.5	65.5	66.6	23.3	68.5	70.3	20.2
D	59.2	61.7	36.4	61.8	64.9	36.5	65.5	66.6	23.3	68.5	70.3	20.2
E	59.2	65.6	28.0	63.8	62.2	59.1	66.4	72.0	8.2	68.9	68.5	26.1
F	60.5	59.7	57.7	63.5	65.1	43.5	76.5	67.0	26.7	68.7	72.6	16.7
G	61.3	60.0	56.1	64.4	62.6	60.5	68.0	68.4	22.9	69.3	69.7	23.1

Ostensibly, a greater proportion of these outstanding students enter fields of endeavor other than Education. Of the science group, a large proportion go into industry or other lines of post-graduate endeavor, but they do not come into Education in large numbers. This fact presents one of the serious problems of staffing our secondary schools with teachers of adequate calibre in the science field. The situation resulting from this condition is the usual vicious circle. Our Universities do not provide our secondary schools with teachers of adequate background in the science field, and our secondary schools therefore send to the Universities a group of students ill-prepared to undertake advanced work in science. The situation in the field of mathematics is probably just as serious. One of the major problems, then, of school staffing is to induce well trained science and mathematics students to enter the teaching field.

Table III reveals also that on the whole Education students compare better with their academic confreres in the third year than they do in the fourth year. Probably the best explanation for this is that there is a fair amount of withdrawal of the poorer students in the third year so that in the fourth year the Education students are being compared with a more highly selected academic group.

It is interesting to study the comparison of achievement between Education and Arts and Science students in general through the individual subject failure rates of the two groups over a five year period. Table IV was designed to present these data.

TABLE IV

AVERAGES AND FAILURE RATE PERCENTAGES FOR STUDENTS IN EDUCATION FOR
FIVE YEARS COMPARED WITH STUDENTS IN ARTS AND SCIENCE FOR THE CORRESPONDING YEARS

SUBJECT	AVERAGE & % F.	ED. 1948-49	A. & Sc. Corr. Yrs.	ED. 1949-50	A. & Sc. Corr. Yrs.	ED. 1950-51	A. & Sc. Corr. Yrs.	ED. 1951-52	A. & Sc. Corr. Yrs.	ED. 1952-53	A. & Sc. Corr. Yrs.
History III	Av.	62.1	56.9	54.5	55.9	56.8	57.6	54.3	54.1	64.1	54.1
	% F.	10.0%	25.8%	41.6%	21.4%	22.2%	18.3%	12.5%	22.3%	0.0%	22.1%
History IV	Av.	61.5	62.0	58.9	60.2	64.4	61.0	53.4	58.5	63.8	55.4
	% F.	10.0%	6.3%	7.1%	4.6%	5.3%	7.9%	25.0%	14.6%	0.0%	15.3%
Mathematics III	Av.	61.4	53.4	57.6	55.2	53.4	56.7	66.5	50.3	60.5	54.4
	% F.	8.8%	35.3%	15.0%	30.7%	38.2%	29.4%	0.0%	32.2%	10.0%	31.8%
Mathematics IV	Av.	65.4	62.9	55.9	59.3	56.2	55.1	68.7	62.0	63.4	61.8
	% F.	6.2%	13.1%	31.2%	18.9%	19.2%	17.9%	0.0%	16.5%	11.8%	24.1%
Physics III	Av.	50.9	53.3	56.0	53.2	50.7	49.8	68.0	48.2	59.5	53.4
	% F.	57.1%	48.6%	28.6%	47.0%	36.4%	48.7%	0.0%	53.9%	25.0%	42.5%
Physics IV	Av.	69.1	68.5	63.6	68.9	62.5	64.8	64.0	66.8	61.5	61.0
	% F.	0.0%	15.4%	20.0%	14.7%	22.2%	8.4%	0.0%	15.1%	0.0%	21.6%
Chemistry III	Av.	58.1	61.3	61.5	57.0	56.1	58.5	54.0	59.9	79.0	52.2
	% F.	30.0%	24.8%	21.0%	26.2%	29.4%	27.4%	0.0%	26.9%	0.0%	35.4%
Chemistry IV	Av.	56.4	66.0	61.7	67.0	58.8	62.7	64.0	63.5	61.0	59.0
	% F.	26.3%	3.8%	23.5%	2.8%	11.8%	15.9%	0.0%	11.8%	0.0%	17.3%
English III	Av.	58.6	52.8	60.7	58.9	63.7	59.4	60.1	57.4	63.2	58.5
	% F.	9.4%	24.5%	5.0%	15.4%	5.7%	7.6%	0.0%	10.0%	2.6%	12.8%
English IV	Av.	54.0	56.5	60.4	61.7	61.3	61.2	59.0	59.9	62.6	59.9
	% F.	30.0%	20.8%	11.8%	6.9%	2.8%	7.0%	5.5%	8.5%	2.6%	7.6%
French III	Av.	60.2	56.3	56.9	56.3	58.6	57.1	62.2	56.7	57.4	59.9
	% F.	9.1%	27.9%	31.3%	30.6%	5.0%	22.3%	20.0%	9.3%	25.0%	23.1%
French IV	Av.	62.0	61.4	63.6	65.6	64.3	65.7	65.2	66.3	64.3	65.6
	% F.	11.1%	13.3%	6.7%	2.8%	0.0%	4.8%	0.0%	6.1%	5.5%	6.0%

It is evident from the table that failure rates across the five year period among Education students vary very little from those of students in general. In fact in forty of the sixty examinations shown in the table the failure rate among future Education students was less than that of students in general. The subjects listed in the table are the subjects the Faculty of Education considers important as background for secondary school teaching. The examinations reported are the April examinations, and many students who enter Education clear their supplementals during the summer session.

In order to determine the general nature of the academic background of Education I students, a study was made of the frequency of selection of courses in the third and fourth years. The facts are shown in Table V. This table shows the frequency of subject choice among students entering Education. Each subject has been expressed in terms of credit given for each subject towards a degree, i.e., each four unit course has been expressed as unity, not in terms of the number of units credited towards a degree.

From the last column in Table V it seems evident that the bulk of the academic work taken by Education I students lies in the fields of English, Psychology, Mathematics, Sociology, History, French, Philosophy and Chemistry. This would seem to indicate that the future secondary school teachers of Manitoba have obtained a rather solid liberal arts background as a basis for their teaching. They appear to be strong in English, Mathematics and French, but relatively weak in such fields as Science, Fine Arts, Geography and Health. A fairly large proportion of these future teachers will go into teaching situations where they will be required to teach a wide range of subjects in one-and two-room high schools before they attain positions in which their specialized training can be put to use.

It is possible, of course, that their liberal arts training may fit them more adequately for this type of teaching than a high degree of specialization in their University courses. However, the over-all weakness in certain areas of high school content is evident, and one of the problems involved here is to what extent teacher training institutions might take care of these possible deficiencies.

One more table might be of interest from the point of view of selection of candidates for teacher training. Table VI shows the frequency distribution of marks in the third and fourth years of Arts & Science achieved by Education I students. Two hundred thirty-one complete cases were available and of these about ten percent had failing averages (below 50) in the third year and about five per cent had failing averages in the fourth year. One wonders whether or not students of this kind are fit material for teaching. At the present time our selection methods do not enable us to eliminate these individuals. Of course, our present measures of teaching success hardly permit us to evaluate these students in the light of their teaching success as against their academic backgrounds. One of the serious problems facing teacher educators is, and has been, to what extent teaching success is based upon the academic background of the teacher. The

TABLE V

INDICES ON FREQUENCY OF SUBJECTS ELECTED BY EDUCATION STUDENTS IN THEIR
THIRD AND FOURTH YEARS OF ARTS AND SCIENCE

SUBJECT	THIRD YEAR CHOICES					Total	FOURTH YEAR CHOICES					Total	TOTAL
	48-49	49-50	50-51	51-52	52-53		48-49	49-50	50-51	51-52	52-53		
English.....	32	20	34.5	17	39	142.5	20	17	36	18	39	140	282.5
Psychology.....	26	22	38.5	11	27	123.5	23	22	36	12	27	120	243.5
Mathematics.....	34	19.5	34	5	10	102.5	32	16	25.5	3	17	87.5	190
Sociology.....	13	14	23	8	10	76	21	18	27	7	16	89	165
History.....	20	12	17.5	8	18	75.5	20	14	19	8	18	79	154.5
French.....	11	15.5	20	5	20	71.5	9	15	14	6	18	62	133.5
Philosophy.....	13	7	10	17	15	62	16	6	13	16	15.5	66.5	128.5
Chemistry.....	20	18.5	17	1	3	59.5	18.5	17	17	1	4	57.5	117
Physics.....	13.5	7	11	1	4	36.5	13	5	9	1	2	30	66.5
Government.....	4	1	7	4	7	23	5	4	9	4	10	32	55
Latin.....	4	6.5	3	4	6	23.5	5	9	3	4	5	26	49.5
Zoology.....	7.5	8	3	2	1	21.5	6.5	8	5	2	2	23.5	45
Economics.....	3	6	4	3	66	22	1	3	2	0	4	10	32
Geology.....	5	4	5	1	1	16	5	4	4	1	1	15	31
German.....	5	2	6	2	0	15	4	2	7	2	1	16	31
Botany.....	4.5	6	3	0	1	14.5	6	5	3	0	0	14	28.5
Religious Studies.....	3	1	1	0	2	7	2	1	7	2	5.5	17.5	24.5
Music.....	2	1	2	3	1	9	1	0	1	2	0	4	13
Statistics.....	1.5	0	3.5	1	1	7	1	0	1.5	1	1	4.5	11.5
Fine Arts.....	1	0	0	0	2	3	2	1	1	2	2	8	11
Geography.....	0	0	0	2	2	4	0	0	1	3	2	6	10
Actuarial Science.....	2	3	0	0	0	5	1.5	3	0	0	0	4.5	9.5
Greek.....	0	2	1	1	0	4	0	2	1	1	0	4	8
Bacteriology.....	0	0	0	0	0	0	1.5	4	2	0	0	7.5	7.5
TOTAL.....	224	176	244	96	184	924	224	176	244	96	184	924	1848

reader of this paper attempted to investigate this problem in his master's thesis. The results were not too satisfactory but evidence was presented to show that in all but a few teaching areas the correlation between teaching success as measured by pupil achievement and the extent of the teachers training in the subject matter as measured by University credits is not too high although in most instances the correlations were positive and significant. This would seem to indicate that while the teacher's preparation in the subject, other things being equal, does have an impact upon the teaching outcomes, there are many other factors, many of them unmeasurable, and most of them uncontrollable, which do have just as important an impact.

TABLE VI

FREQUENCY DISTRIBUTION OF AVERAGE MARKS ACHIEVED BY EDUCATION I STUDENTS IN THIRD AND FOURTH YEARS OF THEIR ARTS AND SCIENCE STUDIES OVER A FIVE YEAR PERIOD

INTERVAL	THIRD YEAR	FOURTH YEAR
85-87	2	1
82-84	0	1
79-81	2	8
76-78	6	10
73-75	11	10
70-72	17	26
67-69	25	23
64-66	21	28
61-63	31	38
58-60	33	39
55-57	38	19
52-54	24	18
49-51	11	3
46-48	4	3
43-45	1	1
40-42	1	2
37-39	3	1
34-36	1	0
Total	231	231

In conclusion, the thesis which I set out to discuss has been in a measure verified. Prospective teachers with college degrees do not differ significantly from college graduates who do not go into teaching in the matter of scholastic aptitude and academic success. The one important difference between the Education population and the college population in general is that it does not contain a large proportion of the outstanding minds which graduate from our Universities.

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GRADUATES EVALUATE A TEACHER-TRAINING PROGRAM*

PROFESSOR JOSEPH KATZ

PROBLEM AND BACKGROUND



The purpose of the present paper is to report a study designed to discover what graduates of the Faculty of Education of the University of Manitoba thought of the teacher-training program after they had begun teaching. Specifically the problem was framed to read: How do graduates evaluate the teacher-training program in the light of their experiences as practising teachers? Although we at the Faculty of Education had been in the practice of evaluating the teacher-training program through comparison with other training programs, through informal discussions, and through formal logical analysis,

it was thought important also to obtain a comprehensive evaluation of the program from former students who were actually teaching, and thus in a position to evaluate the attempt to put into effect the ideas and practices which had been dealt with in the program. Thus, the present study grew out of the regular process of evaluation of the teacher-training program, but this time the attempt was made to approach the problem from a different point of view. In this instance, it was considered important to find out what happens to ideas when they reach the front lines. Although the general, the brigadier, and even the sergeant-major may have an excellent plan of attack, it is not unimportant to weigh what the private has to say about the ammunition with which he has been issued.

In asking the question, "How do graduates evaluate the teacher-training program in the light of their experiences as practising teachers?" certain assumptions had to be made. It was assumed first, that one year's experiences would be sufficient to enable the practising teacher to evaluate the program; second, that school situations would be sufficiently varied to provide adequate criteria of the program; third, that the practical situation in the classroom could provide a basis for modification of a planned program of teacher-training; fourth, that the interest of the practising teacher would be sufficiently critical to guide his or her appraisal; and, fifth, that the factor of bias in the expression of opinion would be sufficiently offset by the factor of universality.

Before pursuing the examination of the study further, let us examine the teacher-training program obtaining in the Faculty for the period covered by the study, the years 1950, 1951, and 1952. The Faculty

* An address to the Teacher Training Section of the Canadian Education Association Conference, Halifax, Nova Scotia, September, 1953.

provided a one-year (seven month) program for graduates holding a B.A., B.Sc., or B.S.A. degree. The course of study extended over two terms, the first dealing with elementary, and the second with secondary levels. Throughout both terms all students were expected to take Principles of Teaching, Philosophy of Education, Educational Psychology, Physical Education, and School Practice. In the first term, in addition, all were expected to take English and Arithmetic, and one of either Social Studies or Elementary Science. In the second term each student had to choose at least two methods courses, for secondary schools. Students were required to practise one day a week throughout the first term in the elementary school, and one two-week period in the second term in each of Junior and Senior High Schools.

Another aspect of this program is to recognize that our students come to us for the express purpose of receiving training to fit them for secondary school positions. A few did ultimately decide to practice in the elementary school, but the Provincial Normal school undertakes to train teachers for the elementary and also for the junior high positions.

The students who responded to the questionnaire were teaching in all grades and in all types of schools in Manitoba. No replies were received from any graduates teaching outside of Manitoba.

From the number of observations extended by respondents beyond the suggested outline of the questionnaire it may be deduced that in most instances careful thought was given to each answer. The sample is representative of the entire student body, and represents also a good cross-section of experience.

RESEARCH AND DESIGN

There have been several significant attempts made to follow-up the effect of teacher-training programs on the work of the beginning teacher by having practising teachers evaluate the program.

Mosier, Tedrick, and Albert (1) report a study of evaluation by teacher-graduates of a training program in Michigan. Although this study was part of a much broader evaluation of Michigan educational institutions, it was nevertheless instrumental in leading to a series of changes in the program afforded prospective teachers. In the main eleven areas of interest were affected: (1) Course objectives (2) Course planning (3) Class organization (4) Class period (5) Counselling and Guidance (6) Professional preparation (7) Special methods (8) Social experience (9) Faculty-student initiative (10) Public relations, and (11) Measurement and appraisal.

Troyer and Pace (2) in Evaluation in Teacher Education prepared for the Commission on Teacher Education describe follow-up studies conducted at the University of Minnesota, at Stanford, and at Columbia. In each instance the strengths and weaknesses of the teacher-training program were evaluated by the graduates, and the institutions involved undertook to modify their programs in the light of the findings. Stanford, for example, found that the students considered that a strong feature

of their program was grounding in subject-matter; that the practice-teaching program was too brief and ought to be extended; that the counselling and guidance services ought to be improved.

Prall reports in State Program for the Improvement of Teacher Education the changes wrought by a follow-up study. Amongst some seventeen recommendations for change were: (1) substitute some other type of evaluation for marks in practice-teaching (2) have student-teachers begin work at the time the public schools open (3) introduce experiences with children and youth earlier than in the senior University year (4) make provision for participation of prospective teachers in the ongoing activities of teachers in service, and (5) give supervising teachers and students more leisurely opportunities to exchange ideas.

The Curriculum Committee of the School of Education, Syracuse University, reports in A Functional Program of Teacher Education a follow-up study using the questionnaire as one device by means of which to obtain student opinion of the course offerings in the teacher-training program. As a result of its evaluation the Syracuse study reports modification of its training program so as to have: (1) a unified program (2) an all-university school of education (3) a better procedure for the selection of students (4) an improved curriculum (5) more emphasis on adolescent development (6) a closer study of school courses of study, and (7) better evaluation of extra-mural teaching.

The most significant aspect of these studies is the development of a systematic form of appraisal of the program by the students, the consumers of the product of the teacher-training college. Each study constitutes a well-thought out technique for the evaluation of the program so as to keep the institution abreast of the needs of teachers in practice. This is an essential step in any training program and one which contributes to providing the institution with data for its own peculiar development. Inasmuch as teacher-training institutions are basically structured to meet the teacher needs on a more or less regional basis, it is necessary for each institution to develop its own particular form of appraisal in order to serve its local needs best. Moreover, it is necessary for each teacher-training institution to gear its appraisal to its objectives, and since each institution's objectives will differ in some form or other from that of other institutions, it is again necessary to devise a particular form of appraisal. Too, the value of appraisal stems from the benefits to be derived from critical evaluation of the program rather than from any procedure of a laissez-faire nature. Ultimately, the findings of each appraisal contribute to changes which make the learnings more specifically applicable to the teaching situation in which the graduate finds himself. The final test of a good teacher-training program is its effectiveness in producing teachers who have confidence in handling the situations in which they find themselves.

The present study is based primarily on a questionnaire designed to obtain from graduates who were teaching their opinion of the teacher-training programs as a whole. A select list of twenty-five students representing the years 1949 to 1952 were asked to write a letter setting forth their views of the strengths and weaknesses of the teacher-training program as they had experienced it. These letters were then analyzed

for the points raised, and these were tabulated and classified. A second step involved the analyses of questionnaires used by other institutions in similar follow-up studies. The findings of both analyses were combined in one questionnaire, which was then submitted to the staff members of the Faculty of Education for criticism.

The questions asked, and each question was broken up into several easily checked parts, were: (a) How much of value did you receive from each of several broad areas into which the year's program was divided? (b) Indicate your appraisal of the Faculty Services as to how adequately they meet your present needs as a teacher. Here questions of personal contacts, variety of course offerings, and assistance in placement were raised. (c) How much of practical value for your teaching have you derived from each of the areas of elementary, junior and senior high education? (d) How much of value did you obtain from your practice teaching (i) through the work of the Faculty staff advisers (ii) through the work of the teachers under whom you taught (iii) through the general weekly conferences, and (iv) through the organization of the practice teaching. Sections (e) and (f) dealt with the general and methods courses respectively, while (g) requested an appraisal of the general organization of the teacher-training program.

THE METHOD OF ANALYSIS

The students were asked to evaluate each item on a three point scale indicating whether or not they had derived much, some, or little value from that particular phase of the program.

These were then added, and percentages calculated for each item separately. To interpret the trend of opinion on this three point scale, a trend was considered definite if the sum of the percentages on any two adjacent points of the scale was more than three times as great as the third. It was less definite if it was only twice as great. For example, in Item 1, Table I, 35% of the replies indicated that much value had been derived from the methods courses, 57% some, and 8% little. Since the sum of 35% and 57% is 92% the trend was scored double positive, indicating a definite trend in opinion of value. In Item 7 of Table II, 29% of the replies to this item reported much value, 45% some value, and 27% little. Here the sum of 29% and 45% is less than three times 27% indicating a less definite trend, and in fact of doubtful registration.

DATA AND INTERPRETATION

The questionnaire was mailed to 43 students of the 71 graduating in 1950, and 21 replied; to 64 students of the 85 graduating in 1951, and 30 replied; and, to 35 students of the 43 graduating in 1952. There was a total reply of 68 out of a possible 130 representing a net return of 52% for the three years.

TABLE I
STUDENT OPINION OF VALUE RECEIVED FROM GENERAL ASPECTS
OF EDUCATION COURSE

ITEMS	Trend	Much %	Some %	Little %
1. Methods courses	++	35	57	8
2. Professional courses	—	15	61	24
3. Practice Teaching program	++	70	24	6
4. Interviews with staff members	—	16	48	36
5. Seminars	—	21	30	48
6. Conferences with fellow students	++	37	49	14
7. Reading in library	—	14	53	33

From the data shown in Table I it would appear reasonable to interpret that the methods courses offered are quite adequate, as are the provisions for practice teaching and for opportunities for students to discuss their experiences. The students evidently felt a lack in the professional courses offered, and also that there was insufficient opportunity to have seminars, and interviews with staff members. Too, they appeared to have little opportunity to use the library.

TABLE II
STUDENT OPINION OF FACULTY SERVICES PROVIDED

ITEMS	Trend	Much	Some	Little
1. Personal guidance	—	21	48	31
2. Professional advisement	—	28	42	30
3. Library facilities	++	32	45	23
4. Variety of courses available	++	33	48	19
5. Facilities for recreation	+	55	17	28
6. Administration of schools	—	14	42	44
7. Visiting specialists	+	29	45	27
8. Observation of expert demonstration teachers	—	28	38	34
9. Assistance in placement	++	44	34	23
10. Provision of bibliographies	++	42	46	12

Students indicated satisfaction with services provided by the Faculty in library facilities, variety of courses available, visiting specialists, assistance in placement, and provision of bibliographies. They were not satisfied with the personal or professional guidance afforded, nor with the opportunity to observe expert demonstration teachers. Furthermore, they would have liked more attention given to the administration of schools.

TABLE III
VALUE OF AREAS OF EMPHASIS FOR TEACHING

ITEMS	Trend	Much	Some	Little
1. Elementary Education	—	25	44	32
2. Junior High Education	++	29	52	19
3. Senior High Education	++	26	62	12

To the question how much of practical value for your teaching have you derived from elementary, junior high, and senior high education there was indicated a greater satisfaction with the junior and senior high than with the elementary program.

TABLE IV
VALUE OF PRACTICE TEACHING

ITEMS	Trend	Much	Some	Little
1. Through the work of the Faculty Advisors				
(a) in developing broad concepts of teaching	—	24	48	28
(b) in assistance with practical problems	—	22	28	49
2. Through the work of teachers under whom taught				
(a) in providing sufficient actual teaching experiences	++	67	27	6
(b) in providing specific helpful suggestions	++	49	27	24
3. Through the general yearly conferences				
(a) in outlining of problems and procedures	—	16	56	28
(b) in considering patterns of school organisation	—	11	58	32
(c) in demonstration of skills and procedures	—	28	44	28
4. Through the organization of the practice teaching				
(a) in periods of two or three weeks	++	80	20	0
(b) in periods of a day or two per week for several months	—	13	55	32

In their practice teaching experience the students indicated satisfaction with the opportunities for teaching, and with the helpful suggestions afforded them by the teachers under whom they taught. They very definitely showed a liking for blocks of practice teaching in preference to one or two days a week spread over several months. The students felt a weakness in the provisions of the Faculty through the work of the advisors in developing broad concepts of teaching and in assistance with practical problems. They felt, too, that the general weekly conferences were weak in organization and procedure.

TABLE V
VALUE OF GENERAL PROFESSIONAL COURSES

ITEMS	Trend	Little	Some	Much
1. Principles of teaching	—	12	47	41
2. History of education	—	19	49	32
3. Mental and achievement testing	++	39	49	12
4. Educational psychology	++	44	43	13
5. Guidance techniques	—	18	47	35
6. Philosophy of education	—	25	43	32
7. Physical education	++	60	28	12
8. Visual aids	+	42	25	33
9. Speech and radio	—	15	35	50
10. Course of study organization	—	15	32	53

Of the general professional courses offered by the Faculty, students indicated satisfaction with mental and achievement testing, educational psychology, physical education, and with visual aids. The students felt

that they had received little value from principles of teaching, history of education, guidance techniques, philosophy of education, speech and radio, and from course of study organization.

TABLE VI
VALUE OF THE ELEMENTARY METHODS COURSES

ITEMS	Trend	Much	Some	Little
1. Oral and written expression	—	23	40	37
2. Reading	—	20	50	30
3. Arithmetic	++	54	39	7
4. Science	++	42	39	19
5. Social studies	++	40	38	22

The elementary methods courses considered adequate by the students were arithmetic, science, and social studies. Those considered inadequate were oral and written expression, and reading.

TABLE VII
VALUE OF SECONDARY METHODS COURSES

ITEMS	Trend	Much	Some	Little
1. Latin	++	91	9	0
2. French	++	53	29	18
3. English	++	51	40	9
4. Science	++	55	32	14
5. Mathematics	++	73	23	4
6. History	++	41	47	12
7. Geography	+	42	32	26
8. Music	—	0	34	66
9. Art	—	17	33	50
10. P.T.	++	72	22	6

With the exception of the course offerings in Art and Music which were considered inadequate, the students found all other methods courses for the secondary level adequate. These included: Latin, French, English, Science, Mathematics, History, Geography, and P.T.

TABLE VIII
VALUE OF GENERAL ORGANIZATION PROGRAM

ITEMS	Trend	Much	Some	Little
1. Intellectual challenge	—	24	50	26
2. Calibre of examinations	—	22	39	39
3. Interpretation of teaching as a field of work	++	33	45	22
4. Form of lecture presentations	++	26	62	12
5. Opportunity to discuss educational problems	—	25	35	40

The students were not too happy about the intellectual challenge of the course, nor with the calibre of the examinations. They felt, too, that they had not had sufficient opportunity to discuss educational problems. The students were generally satisfied with the interpretation given teaching as a field of work, and they were apparently satisfied with the form of lecture presentations.

In addition to the foregoing analysis, students were asked to list the three courses they considered most valuable to their teaching, and the three courses they considered least valuable. In these responses the students registered a measure of satisfaction with arithmetic, social studies, Latin, French, English, Science, mathematics, geography, physical training, mental and achievement testing, educational psychology, practice teaching, and home economics. They registered dissatisfaction with elementary reading, music, art, principles of teaching, history of education, guidance techniques, philosophy of education, visual aids, speech and radio, course of study and administration.

The students were asked to add such further comments as they thought necessary and fit. These comments are indeed enlightening apart from indicating the interest of the students and reflecting the thought given. It is noteworthy that approximately 90% of the students did add comments, in some instances quite lengthy, and in almost all instances of a constructive nature. I quote from the 1950 group:

1. "I also believe a very practical and down-to-earth course could be prepared on disciplinary techniques.

2. "Also a short course on how to live on a teacher's salary.

3. "I think that all Faculty students should be exposed to undesirable school conditions as well as good conditions.

4. "After four years in the Faculty of Science, I felt that my Faculty year was not heavy enough.

5. "Other social agencies should be more thoroughly sold to student teachers.

6. "Sufficient stress should be laid on teaching today — as a science — backed up by factual research and a modern open-mindedness.

7. "I would like to see the teachers in the schools where practice teaching is done become part of the program.

And the 1951 group added:

1. "I believe sincerely that the most important thing that Faculty should do is to inspire self-confidence and that, in my opinion would be accomplished if the training were based upon the realities of teaching rather than upon the theories.

2. "As a teacher of commercial subjects I consider that very little stress is placed on these subjects in the Faculty.

3. "Hypothetical cases of classroom behaviour should be made the starting point of discussion. More emphasis should be placed upon spoken English, to equip the teacher with the skill to meet classes.

4. "I believe that a two-year course should replace the present Diploma year.

5. "More opportunity should be given for observing experienced teachers in action.

6. "I found the preparation of lesson plans for a particular unit and their actual teaching in the Home Economics methods course most useful.

And those of the year 1952 wrote:

1. "To me there seemed a good deal of very sound theory — but

I so seldom saw it applied. Bring textbooks into the class a little more and show the students just how practical the theory really is.

2. "I think seven months is too short a time in which to try to give an adequate foundation in both elementary and secondary work.

3. "More time and thought could be given to the administration of schools.

4. "Practice teaching does not provide an opportunity for a student to try his own discipline methods to any extent.

5. "The Faculty program lives too much by ideal situations. Most of the time actual situations are far from ideal."

These responses are indeed indicative of interest and are critically constructive. In going beyond the confines of the questionnaire, these students obviously drew upon their first year's experience in evaluating the program which they had had.

TABLE IX
SUMMARY TABLE OF STUDENT EVALUATIONS

I.—			V.—		
1. methods	++		1. principles	—	
2. professional	—		2. history of education	—	
3. practice	++		3. M & A Testing	++	
4. interviews	—		4. Educ. Psych.	++	
5. seminars	—		5. Guidance	—	
6. conferences	++		6. Philosophy	—	
7. reading	—		7. P.T.	++	
II.—			8. Visual Aids	+	
1. personal	—		9. Speech & Radio	—	
2. professional	—		10. Course of Study	—	
3. library	++		VI.—		
4. variety	++		1. Oral & Written Exp.	—	
5. recreation	+		2. Reading	—	
6. administration	—		3. Arithmetic	++	
7. specialists	+		4. Science	++	
8. observation	—		5. Social St.	++	
9. placement	++		VII.—		
10. bibliographies	++		1. Latin	++	
III.—			2. French	++	
1. elementary	—		3. English	++	
2. junior	++		4. Science	++	
3. senior	++		5. Mathematics	++	
IV.—			6. History	++	
1. Concepts	—		7. Geography	+	
2. practical problems	—		8. Music	—	
3. teaching experience	++		9. Art	—	
4. helpful suggestions	++		10. P.T.	++	
5. outlining problems	—		VIII.—		
6. patterns of organization ..	—		1. Intellectual Challenge	—	
7. demonstrations	—		2. Examinations	—	
8. block practice	++		3. Field of Teaching	++	
9. day practice	—		4. Lectures	++	
			5. Discussion	—	

A summary of the findings points up the following:

(1) The students were generally satisfied with the methods courses offered though not always to the same extent.

(2) There was a marked dislike of those courses which had to do with the background of teaching, like history and philosophy.

(3) There was an expressed desire for closer contact with staff members in order to discuss educational problems.

(4) There was an apparent satisfaction with the general organization of the teacher-training program and with the facilities provided.

(5) There was a significant criticism of the calibre of examinations and of the intellectual challenge afforded by the program.

(6) There was a distinct recognition of the value of practice teaching and a marked preference for block practice as against distributed practice.

(7) The graduates felt that the elementary phase of the program was not as valuable as either the junior or senior high phases.

(8) There was an expressed need to become conversant with the working of the educational machine as a whole.

(9) The students felt that there could be more opportunity for observation of good demonstration lessons.

CONCLUSIONS AND RECOMMENDATIONS

The problem posed in this study was how do graduates of the Faculty of Education at the University of Manitoba evaluate the teacher-training program in the light of their experiences as practicing teachers.

Before moving on to detail the conclusions which may be drawn from the evidence it would be well to note that the program which the students of the years 1950 to 1952, both inclusive reported on, has since been changed. For one thing the introduction of the seminar, the allocation of specified students to each staff member for the whole academic year, and the introduction of more demonstration lessons, has gone far to meeting many of the implied criticisms made by the students.

Nevertheless, one may conclude that the students after teaching for approximately one year would like to have had in their teacher-training program:

(1) Training and examinations that were more rigid in their requirements.

(2) Opportunity to observe expert demonstrations with the further opportunity to discuss what had been observed.

(3) A broader grasp of the working of the educational system as a whole and their particular part in it.

(4) A more practical interpretation and application of the materials to be found in principles, history, and philosophy of education.

What program design for teacher-training is implied by these findings? Apart from the obvious fact that a one-year training program sets limits that are hard to meet yet there is a very definite design suggested. First, there is the necessity for a well-organized and well-conducted practice teaching program that is integrated with the course work. Second, there is need to provide ample opportunity for the exchange of ideas through discussion in groups small enough to permit person-to-person relationships. Third, there must be recognized the desire of the student for clear, sharp, and rigid definitions of the various phases of the teaching process. Fourth, the student is interested in

understanding exactly how the teaching process functions in its manifold aspects. Fifth, there is a definite need to reduce the number of broad and unfounded generalities which clutter educational expression and to substitute therefore statements which can stand the rigid tests of logic or experiment. Sixth, the teacher-training program must provide the student with the opportunity to develop the skills necessary in the classroom, on the playground, and in the community. Seventh, the program must at all times be practical, but in being so recognize that theory and practice go hand in hand. Eighth, the student wants an opportunity to review, at least in outline, the fundamentals of the content he is going to have to teach.

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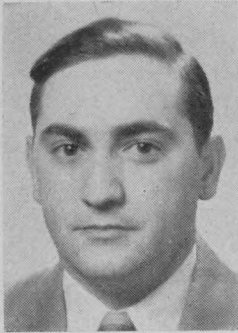
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A COMPARISON OF THE EDUCATIONAL AIMS OF CHARLES PEIRCE AND JOHN DEWEY

PROFESSOR GEORGE S. MACCIA



The public schools are under attack. Modern education is accused of neglecting to teach children the fundamental skills. It is claimed that the emphasis on vocationalism is so great that moral and logical problems are neglected. The recent attacks are swelling with the fervor of those leveled against "Progressive Education" approximately fourteen years ago. A review of the literature of the criticisms against modern education will show that the attacks center upon what is termed the relativism of pragmatism. Perhaps the sum total of such objections has been expressed by William Pepperell Montague

as follows:

"Now, pragmatic relativism in its repudiation of logical validity and in its substitution of the new interest in psychological genesis for the old interest in objective truth and falsity voices accurately and in the language of technical philosophy the anti-intellectualism that dominate the new school of political and social science. In theory it means the deliberate and systematic repudiation of that disinterested faith in ideals which, however imperfectly practised in the past, has been the inspiration of human greatness."¹

Although this is not the case with Montague, many writers and critics of pragmatism fail to see differences between the positions of such writers as James, Peirce, and Dewey. Such confusion is perhaps greater between the philosophies of Peirce and Dewey. Before treating the educational aims of Peirce and Dewey a brief consideration of their writings on the problem of reality, knowledge, and truth will help clarify the differences in their educational aims.

Charles Peirce was a realist.

"Truth is the conformity of a representation to its object . . . Only, what is that 'object' which serves to define truth? Why it is reality: it is of such nature as to be independent of representations of it . . ." (I.578)²

". . . the real is that which insists upon forcing its way to recognition as something other than the mind's creation." (I.324)

Dewey denies the existence of any antecedent reals. He emphatically repudiates a conformance theory of truth.

1 Montague, William Pepperell, *The Ways of Knowing* (N.Y.: Macmillan Co., 1948).

2 In keeping with the common practice when referring to Charles S. Peirce, *Collected Papers*, eds. Charles Hartshorne and Paul Weiss (Cambridge: Harvard University Press, 1931), vols. I-IV, reference notations will be made in the body of the text. The Roman numeral stands for the Volume. The Arabic numeral stands for the paragraph.

"The conclusion of this part of the discussion will be that standards and tests of validity are found in the consequences of overt activity, not in what is fixed prior to it and independently of it."²

"... notions are true because they do have to do with true being — with full and ultimate Reality. Such a notion lies at the back of the head of every one who has, in however an indirect way, been a recipient of the ancient and medieval tradition. This view is radically challenged by the pragmatic conception of truth, and the impossibility of reconciliation or compromise is I think, the cause of the shock occasioned by the newer theory."³

"'Real' things may be as transitory as you please or as lasting in time as you please; these are specific differences like that between a flash of lightning and the history of a mountain range. In any case they are for knowledge of 'events' not substances."⁴

In his statements on knowledge Peirce clearly relates knowing with experienced existence.

"The knowledge which you are compelled to admit is that knowledge which is directly forced upon you, and which there is no criticising, because it is directly forced upon you." (II.141)

"It thus appears that all knowledge comes to us by observation. A part is forced upon us from without and seems to result from Nature's mind; a part comes from the depths of the mind as seen from within, which we call our mind." (II.444)

"As all knowledge comes from synthetic inference, we must equally infer that all human certainty consists merely in our knowing that the processes by which our knowledge has been derived are such as must generally have led to true conclusions." (II.693)

Dewey in defining knowledge uses terms which deny correspondence and affirm operation as the essence of knowing.

"Knowledge then does not encompass the world as a whole. But the fact that it is not co-extensive with experienced existence is no defect or failure on its part. It is an expression of the fact that knowledge attends strictly to its own business;- transformation of disturbed and unsettled situations into those more controlled and more significant."⁵

"When the belief that knowledge is active and operative takes hold of men, the ideal realm is no longer something aloof and separate; it is rather that collection of imagined possibilities that stimulates men to new efforts and realizations."⁶

"When the practice of knowledge ceased to be dialectical and became experimental, knowing became preoccupied with changes and the test of knowledge became the ability to bring about certain changes."⁷

For Peirce the final goal of inquiry is truth.

"Truth is that concordance of an abstract statement with the ideal limit towards which endless investigation would tend to bring scientific belief, which concordance the abstract statement may possess by virtue

2 John Dewey, *The Quest for Certainty* (N.Y.: Minton, Balch Co., 1939), p. 73.

3 John Dewey, *Reconstruction in Philosophy* (N.Y.: New American Library, 1951), p. 130.

4 Dewey, *Quest for Certainty*, p. 128.

5 Dewey, *Quest for Certainty*, p. 26.

6 Dewey, *Reconstruction in Philosophy*, p. 103.

7 Dewey, *Quest for Certainty*, p. 227.

of the confession of its inaccuracy and onesidedness, and this confession is an essential ingredient of truth." (V.565)

"... there is something that is So, no matter if there be an overwhelming vote against it." (II.135)

Peirce would not accept the tenet that truth is measured by verification through direct observation. (V.597) Dewey's maxim of truth rests in such verification. Dewey says:

"In physical matters men have slowly grown accustomed in all specific beliefs to identify the true with the verified. But they still hesitate to recognize the implication of this identification and to derive the definition of truth from it."¹

For Dewey the final goal of inquiry is the melioration of man's ills both physically and socially.

"The only guarantee of impartial, disinterested inquiry is the social sensitiveness of the inquirer to the needs and problems of those with whom he is associated."²

"If ideas, meanings, conceptions, notions, theories, systems are instrumental to an active reorganization of the given environment, to a removal of some specific trouble and perplexity, then the test of their validity and value lies in accomplishing this work. If they succeed, in their office, they are reliable, sound, valid, good, true. If they fail, to clear up confusion, to eliminate defects, if they increase confusion, uncertainty and evil when they are acted upon, then they are false."³

The final aim of all moral action for Peirce is the *summum bonum*. The good aim can be pursued and adopted consistently. However, we can not rely upon either reason (for reason is in its infancy) nor upon science (for science must proceed without reservation to consequences) to yield criteria for moral action. Man's racial instincts and religious heritage must supply the norms for action.

"The pragmatist does not make the *summum bonum* to consist in action, but makes it to consist in that process of evolution whereby the existent comes more and more to embody those generals which were ... said to be destined, which is what we strive to express in calling them reasonable." (V.433)

"Men continue to tell themselves they regulate their conduct by reason; but they learn to look forward and see what conclusions a given method will lead to before they give their adhesion to it. In short, it is no longer the reasoning which determines what the reasoning shall be. This is sham reasoning. In short, as morality supposes self-control, men learn that they must not surrender themselves unreservedly to any method, without considering to what conclusions it will lead them. But this is utterly contrary to the single-mindedness that is requisite in science. In order that science may be successful, its votaries must hasten to surrender themselves at discretion to experimental inquiry, in advance of knowing what its decisions may be. There must be no reservations." (I.57)

"Morality consists in the folklore of right conduct. A man is brought up to think he ought to behave in certain ways. If he behaves other-

1 Dewey, *Reconstruction in Philosophy*, p. 131.

2 *Ibid.*, p. 123.

3 *Ibid.*, p. 128.

wise, he is uncomfortable, his conscience pricks him. That system of morals is the traditional wisdom of ages of experience. If a man cuts loose from it, he will become the victim of his passions. It is not safe for him even to reason about it, except in a purely speculative way." (I.50)

There is no single goal of action — conceived action or otherwise — for Dewey. Speaking of philosophies which hold a *summum bonum* Dewey said:

"And yet these schools have agreed in the assumption that there is a single, fixed and final good . . ."

"The question arises whether the way out of the confusion and conflict is not to go to the root of the matter by questioning this common element . . . It has been repeatedly suggested that the present limit of intellectual reconstruction lies in the fact that it has not as yet been seriously applied in the moral and social disciplines. Would not this further application demand precisely that we advance to a belief in a plurality of changing, moving, individualized goods and ends, and to a belief that principles, criteria, laws are intellectual instruments for analyzing individual or unique situations?"¹

" . . . moralists usually draw a sharp line between the fields of the natural sciences and the conduct that is regarded as moral. But a moral that frames its judgments of value on the basis of consequences must depend in a most intimate manner upon the conclusions of science. For the knowledge of the relations between changes which enable us to connect things as antecedents and consequences is science."²

"Just as rational conceptions were once superimposed upon observed and temporal phenomena, so eternal values are superimposed upon experienced goods. In one case as in the other, the alternative is supposed to be confusion and lawlessness. Philosophers suppose these eternal values are known by reason; the mass of persons that they are divinely revealed."³

"The chief consideration in achieving concrete security of value lies in the perfecting of methods of action . . . It raises the question whether mankind has not now achieved a sufficient degree of control of methods of knowing and of arts of practical action so that a radical change in our conceptions of knowledge and practice is rendered both possible and necessary."⁴

"Judgments about values are judgments about the conditions and the results of experienced objects; judgments about that which should regulate the formation of our desires, affections and enjoyments."⁵

It is evident that ontologically and epistemologically there are differences between the philosophies of John Dewey and Charles Peirce that may not be passed over lightly. In the light of the present censure of our schools it is of value to examine Peirce's philosophy for its implications for education. Since the major objection to the philosophy of John Dewey is his denial of *a priori* reals and since the emphasis of Peirce's philosophy is on *a priori* reals, the aims of education as derived from Peirce's writings may provide in some measure a meeting ground for the protagonists and antagonists of modern education.

1 Dewey, *Reconstruction in Philosophy*, p. 132.

2 Dewey, *Quest for Certainty*, p. 274.

3 *Ibid.*, p. 256.

4 *Ibid.*, p. 36.

5 *Ibid.*, p. 255.

A basic distinction underlying the thought of Peirce and Dewey lies in the problem of knowledge. Peirce emphasizes the cognitive aspect of knowing while Dewey emphasizes the behavioral. This does not mean that Peirce would advocate an armchair kind of education, nor does it mean that Peirce had much faith in direct communication between teacher and student. The student must do his own learning. He, himself, must experience objects and learn about their relation to himself and to each other by the actual manipulation of the objects in his environment. The knowledge of environment, gained by the student from his experience with it, is general. He cannot know the specific thing other than as he has conceptualized it. Thus, the logic of his thinking plays a vital role in his understanding the particular relations under question. The teacher, then, helps the student by helping him overcome the logical difficulties standing in the way of the student's clear comprehension of the relations between the objects studied. (I.657) The teacher would endeavor to have the student penetrate beyond the specific object or event to the principles or laws underlying the relations of the subject. He would aid the student in setting up experimental situations which would test the student's ideas. (I.44) A teacher in a Dewey school would differ in his approach. He would not be concerned with objects of a particular subject but rather with every day events. He would help the student by providing activities which would have practical consequences pertinent to the student's daily life. The teacher would endeavor to have the student foresee consequences so that he would be able to carry on activities which would enable him to make the requisite adjustments for carrying on his daily pursuits.¹ Both Peirce and Dewey emphasize activity in learning, but the outcome of the activity is different. School activity for Peirce would lead primarily to greater rational capacity. School activity for Dewey would lead principally to a capacity for continuous behavioral adjustments.

Growth is a key concept in the thinking of both Peirce and Dewey. However, the purpose of growth is different. In the educational aim of Peirce, growth has an outcome which is other than the process. Growth must end in the *summum bonum*. The purpose of growth for Dewey is more growth. There is no other end than the process itself.² Both men see the growth process as continuous reconstruction of experience. For Peirce the reconstruction must come about principally through reason and it must approach an ultimate. (I.142) The reconstruction is a reconstruction of thought in its relation to things, not of the things in themselves. (II.302)

The concept of interest is part of the educational philosophy of Peirce and Dewey. With Dewey, Peirce maintains that the quality of learning depends upon the extent of the student's interest in what is being done. (V.582) However, what is being done, for Peirce, is the conceptualizing of the experiences undergone. Interest must be a deep-seated impulse "to penetrate into the reason of things", (I.44) for, "there is but one thing needful for learning the truth and that is a hearty and active desire to learn what is true". (V.582) It is quite clear that, according to Peirce, the interest extends beyond the organic state of

1 Dewey, *Democracy and Education*, pp. 89-90.

2 *Ibid.*, p. 62.

the individual and follows a principle. The principle followed is truth. Now truth is independent of the thought or state of the knower. (V.211) Therefore, any organic states which interfere with learning truth must be controlled. Dewey rejects any doctrine of interest based on a principle which is something other than the course of action of the individual. "The principle is not what justifies an activity, for the principle is but another name for the continuity of activity."¹ Interest is not general. It is specific. There is not interest but interests.

"Interest, means that one is identified with the objects which define the activity and which furnish the means and obstacles to its realization."²

The control of self is an educational aim of both Peirce and Dewey. The control of conduct and thought is to come about intrinsically and through the student's own activity. This control comes as a result of experiencing. It is the result of consequences. To these statements both Dewey and Peirce would assent. However, Peirce defines self-control in terms of thought. "Self-control seems to be the capacity for rising to an extended view of practical subjects instead of seeing only temporary urgency." (V.339, n.1)

"In its higher stages, evolution takes place more and more through self-control, and this gives the pragmatist a sort of justification for making the rational purport to be general." (V.432)

Dewey, on the other hand, defines control in terms of action.

". . . Control is a guiding of activity to its own end; it is an assistance in doing fully what some organ is already tending to do."³

Internal control (self-control) arises in the nature of the situations in which the individual takes part. It consists in habits of understanding. These habits are set up "in using objects in correspondence with others whether by way of cooperation and assistance or rivalry and competition."⁴ Thus, in setting up an environment, the school should provide activities which would bring about control ordered by the relations involved in activities. In this educational aim of Dewey, active environment implies behavior, not conception. Peirce's educational environment should lead to conception and to control by conscious intent on the part of the student. In either case, the environment should be one that brings about the desired learning through the student's own experience.

Learning by experience is an aim supported by Peirce and Dewey. The fundamental difference between the educational aim of Peirce and that of Dewey lies in their conception of the nature of experience. For Peirce, experience implies duality. There is an agent and patient which are really distinct from each other. In the learning experience, the student is the patient and the external object is the agent. On the other hand, there is no duality of agent and patient in Dewey's conception of experience. "The nature of experiences can be understood only by noting that it includes an active and passive element peculiarly combined."⁵ However, there is a cognitive aspect in experience. This cognitive aspect of experience lies in seeing connections.⁶ For Peirce, the cognitive aspect of experience is exemplified in the formation of

1 Dewey, *Democracy and Education*, p. 410. 2 Ibid., p. 161. 3 Ibid., p. 29.
4 Ibid., p. 39. 5 Ibid., p. 163. 6 Ibid., p. 163.

ideas. (V.50) It is the formation of ideas which forms the basis for communication.

A comparison of Peirce's and Dewey's educational aims for communication reveals again a basic difference in the thinking of Peirce and that of Dewey. Dewey stresses behavioral activities. According to Dewey, communication is carried on through sharing of activities.¹

Peirce stresses conceptual activities, that communication is carried on by means of the transference of ideas. Obviously, the means for achieving communication would differ in the two schools. Activities in a "Peircian" school would be designed to bring about common, conjoint experience.

Both Peirce and Dewey are in agreement about the importance of the development of imagination as an aim in education. However, their conceptions of the nature of imagination are not the same. Dewey defines imagination as a medium of appreciation in every field. However, imagination should not be confused with imagery (fancy or myth). It is the sensing of meaning. According to Peirce, imagination is a cognitive process whereby images are inferred. (V.303) These images serve as signs representing the object in conceptual processes. Although Peirce recognizes process in experience and imagination, he places his emphasis on the conceptual aspect of this process. For Dewey there is nothing beyond process in experience and imagination. Thus, differences will not be in the type but in the outcome of educational experiences which follow from the respective aims.

Closely related to imagination is memory. Both philosophers reject the faculty theory of memory, and emphasize memory as the process of associating past and present. In Dewey's view memory is considered in terms of the association of events past with events present. The association of events past is accompanied by emotional tone.

"Memory is vicarious experience in which there is all the emotional values of actual experience without its strains, vicissitudes and troubles"²

As Peirce sees it, "the recall of past is a cognitive function. The object recalled is an articulated complex and worked-over product which differs infinitely and immeasurably from feeling". (I.379) The development of the memorial process is an educational aim of both men. It is evident that the two aims are essentially different in their outcome.

The formation of habits is an educational aim supported by our philosophers. Peirce distinguishes between habits of reasoning and habits of conduct. Dewey makes no such distinction. Thinking and conduct are just two sides of the same coin. They are part and parcel of each other. It is evident that classroom activities following Peirce's aim may differ according to the habit being developed. Whereas, the activities carried out under the Dewey aim would be the same. Habits of thinking would be habits of conduct.

In their ethical aims for education, Peirce and Dewey are poles apart. Peirce's aim stresses norms of conduct. Dewey's aim stresses means of action. For norms of conduct, Peirce looks to the Bible,

1 Ibid. p. 11.

2 Dewey, *Reconstruction in Philosophy*, p. 30.

especially the New Testament. The "New Testament is 'not' a textbook of the logic of science", but it "is certainly the highest existing authority in regard to the dispositions of heart which a man ought to have". Peirce fears the rational in morals.

"Well, political economy has its formula for redemption, too. It is this: Intelligence in the service of greed insures the justest of prices, the fairest contracts, the most enlightened conduct of all the dealings between men, and leads to the *summum bonum*, food in plenty and perfect comfort. Food for whom? Why, for the greedy master of intelligence. I do not mean to say that this is one of the legitimate conclusions of political economy, the scientific character of which I fully acknowledge. But the study of doctrines, themselves true, will often temporarily encourage generalizations extremely false, as the study of physics has encouraged necessitarianism. What I say, then, is that the great attention paid to economical questions during our century has induced an exaggeration of the beneficial effects of greed and of the unfortunate results of sentiment, until there has resulted a philosophy which comes unwittingly to this, that greed is the great agent in the elevation of the human race and in the evolution of the universe." (VI.290)

Dewey also fears the rational in morals. However, he does not look to a creed, but rather to society for norms of action. Morality for Dewey is the effective sharing of social living.

"Morals is not a catalogue of acts nor a set of rules to be applied like drugstore prescriptions or cook-book recipes. The need in morals is for specific methods of inquiry and of contrivance: Methods of inquiry to locate difficulties and evils; methods of contrivance to form plans to be used as working hypotheses in dealing with them. And the pragmatic import of the logic of individualized situations, each having its own irreplaceable good and principle, is to transfer the attention of theory from preoccupation with general conceptions to the problem of developing effective methods of inquiry."¹

Since growth is an end in itself, Dewey does not write of growth as the development toward certain ends. For this reason the development of thought must be considered as a separate educational aim. "Thinking is method, the method of intelligent experience in the course which it takes."² Dewey differs sharply from Peirce in defining the nature of thinking, and the way in which thinking can be best developed. Thinking as the method of educative experience can best be developed by:

"... first that the pupil have a genuine situation of experience — that there be continuous activity in which he is interested for its own sake; secondly, that a genuine problem develop within this situation as a stimulus to thought; third, that he possess the information and make the observations needed to deal with it; fourth, that suggested solutions occur to him which he shall be responsible for developing in an orderly way; fifth, that he have opportunity and occasion to test his ideas by application, to make their meaning clear and to discover for himself their validity."³

1 Ibid., p. 136-137.

2 Dewey, *Democracy and Education*, p. 180.

3 Ibid., p. 192.

It is clear from the above quotation that thinking is envisaged by Dewey as consisting principally of intelligent activity. The school teaches problem solving. For Peirce, thought is typified in reasoning. Reasoning is defined as a process which takes place in the consciousness and in which conclusions are inferred from judgments as premises according to a habit of thought which the reasoner approves as a means to truth. (II.773) This method does not specify any particular method of inquiry. Method is implied; albeit, a general method which follows the principles of logic. The improvement of reasoning can be brought about by improving the system of logic whose principles are being followed. (II.190) It is clear, then, that the reasoning of Peirce is not the thinking of Dewey. Probably the most divergent educational practices would result from the differences in the nature of thought as defined by Peirce and Dewey.

On the surface it appears that educational aims derived from the philosophy of Peirce would be more appealing to the antagonists of modern education than it would be acceptable to our schools protagonists. It seems clear, however, that the Pragmatism of Peirce is not the Pragmatism of Dewey. These two philosophies should not be confused as one. Peirce's writings and their implications for education should be examined on their own merits. Also, Dewey's writings and their implications for education should be examined on their own merits.

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RESEARCH AT SASKATOON

PROFESSOR S. CLARK*

In the 25 years which have passed since the first students were enrolled in the newly-formed College of Education, 36 graduates have been granted the degree of Master of Education. Although provisions were made for the Masters' Course at the time the college was opened in 1927, the first degree was not granted until 1932. At the present time, ten graduate students are working on research projects and nine are registered in the Graduate School but have not chosen their thesis topics. The majority of these students are not in attendance at the college but are teaching in Saskatchewan or in Alberta.

The topics of the research projects are varied and reflect to some degree the interest and influence of two professors who have done so much to establish the college, Dr. F. M. Quance and Dr. S. R. Laycock. For many years, Dr. Quance, the first dean, has made an intensive study of the teaching of English, particularly of spelling, and has been concerned with the historical, philosophical, supervisory and financial aspects of Canadian education. Dr. Laycock, who succeeded Dr. Quance as dean in 1947 and who is now on retirement leave, has achieved a wide reputation in the fields of child development, pupil adjustment, mental health, testing, and the education of the exceptional child. The somewhat arbitrary tabulation given below indicates the research fields wherein projects have been completed or are underway at the present time.

	Completed	Current
Adult Education	1	—
History of Education	6	3
Pupil adjustment and Attitudes	6	—
Retardation	—	1
School Finance	1	1
School Subjects:		
Algebra	1	—
English	8	1
Geometry	1	—
Mathematics	1	—
Science	1	—
Special Groups:		
Deaf Children	1	—
Gifted Children	—	1
Only Children	1	—
Tests and Measurements:		
A.C.E. Psychological Examinations	1	—
Departmental Examinations	—	1
Laycock Mental Ability Test	—	1
Stanford-Binet	3	—
W.I.S.C.	—	1
Teachers and Teacher Education:		
Attitudes	1	—
Education	1	—
Salaries	1	—
Training of Nurses	1	—

The single study on adult education was undertaken by Miss Cairns (3, 1950). She sought to find the philosophical principles underlying adult

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education and outlined developments across Canada. She paid particular attention to the movement in Saskatchewan, where she investigated the needs of the people, ascertained the resources available and made several proposals respecting the future.

Research projects on the history of education have been relatively numerous. Three theses have dealt with the development of education in the North-West Territories and in the Province of Saskatchewan. Toombs (33, 1941) considered some features of educational administration up to 1905. Langley (17, 1944) examined the programmes of study followed in the elementary, secondary, and normal schools prior to 1932. Singleton (30, 1949) was interested in some aspects of teacher training during the period 1885-1937. Surveys have been made of educational developments in Saskatchewan's two major cities: Neely dealt with Regina (27, 1946) and Morganroth with Saskatoon (25, 1949). An interesting account of the Mennonites in Western Canada and their educational problems was written by Friesen (10, 1934). Currently, Jameson (37) is tracing the growth of vocational education in Saskatchewan, Rein (40) is writing an historical account of the provincial Department of Education, and Ward (46) is studying the development of supervisory practices in the province from its early years up to 1952.

In spite of the limitations inherent in personality studies, several students have undertaken to make objective studies of student behaviour. Two men have investigated the attitudes of high school pupils. Young (36, 1941) sought to ascertain the views held by a sample of pupils from grades IX to XII regarding school, democracy, war, church, racial prejudice, patriotism, and economic liberalism. Mahood (23, 1944) secured responses to a questionnaire from over 1200 Grade XII students in the prairie provinces. From these replies he examined their attitudes towards three aspects of their educational programme; extra-curricular activities, curricular content and method, and behaviour guidance. Both investigators made comparisons between male and female students and between rural and urban groups. Matched groups of Saskatoon elementary school children were used by McLeod (21, 1940) in his effort to find out whether children of foreign-born parents differed in personality from children of parents born in English-speaking countries. Kereluke (15, 1949) compared first-born with last-born children in the same school system in some aspects of social, self, and emotional adjustment. Using sociometric techniques, Howsam (12, 1950) compared mentally-gifted children attending special classes with their intellectual equals in the regular classrooms. Rubin (28, 1949) used a modification of Sherman's Parental Relationships Inventory in an investigation into the emancipation status of older male adolescents attending the School of Agriculture at the University of Saskatchewan.

Problems of school finance have attracted very few students. In 1950 McNeill (22, 1950) made an analysis of the system of school grants paid to the larger units in this province using as a guide the principles enunciated by Mort and Reusser. McLaren (39) is at present completing a rather complex study of the cost of a defensible foundation programme for Saskatchewan public schools.

Various studies, survey and experimental, have been carried on in the school subjects. Holmes (11, 1940) using equated groups of Grade

X students in a Saskatoon school, sought to ascertain the effects of instruction in reading algebraic materials upon the ability of the students to solve problems in algebra. After analyzing eight mathematics texts used in this province, Durick (7, 1951) devised two tests which he used in appraising the extent to which certain mathematical concepts had been acquired by Grade XII students. Bishop (1, 1949) investigated the relative merits of teaching intuitive geometry by the laboratory-field method and by the traditional method. Lobb (18, 1949) examined the differential effects on recall of using three sizes of diagram. This was carried on in nature science at the Grade VII level. The first thesis completed was that by Russell (29, 1932) who examined the effects on spelling achievement resulting from grouping words by common phonetic elements, by common visual elements, by common meaning or association, and by common origins. Janzen (14, 1933) ascertained what he called the traditional method of teaching grade nine composition and proceeded to compare results attained through this approach with a mode of learning which stressed self-guidance and appraisal. Miss Corrigan (5, 1935) and Kirkpatrick (16, 1935) made somewhat parallel studies; both used the free writing of elementary school pupils in the Western Provinces as their source material. The former was interested in the effect of differences in parental occupations on the vocabulary of Grade II pupils; the latter searched for variations in vocabulary among Grade IV pupils which might be attributed to nationality differences. In a study somewhat akin to Kirkpatrick's, Woollatt (35, 1944) examined the types, frequencies and origins of errors in written work done by children from English, German, Ukrainian, and French homes. Cameron (2, 1943) in the previous year had made an analysis of the free writing of elementary school pupils. An analysis of the spelling disabilities of a group of elementary school pupils and the remedial measures employed in correcting these were reported by Miss Miners (24, 1937). Miss Tronrud (45) is completing a study of the persistence of errors in English, using samples of students from grades VIII, IX, and XII, in Saskatchewan schools.

Studies of exceptional children and of those who as a group differ in some way from their fellows are often of some interest. Fea (8, 1948) sought to discover whether only children had language problems in their written work which were not manifested by children with siblings. Dunn (6, 1950) looked into the worth of Raven's Progressive Matrices as a psychometric tool for use with deaf children. Rennie (41) is doing a follow-up study of children who had been enrolled in the first five classes for the mentally gifted in Saskatoon.

In testing and measurement, the major interest has been in making an analysis of some aspect of a standardized test although one graduate is currently doing a study of much wider scope. Clark (4, 1940), Filby (9, 1942), and Mouly (26, 1947), using as experimental variables, chronological age, foreign or English-language background, and socio-economic status, respectively, employed groups of elementary school pupils matched on relevant variables in their studies of performance on the items of the Revised Stanford-Binet. Walter (34, 1951) investigated the separate and combined effectiveness of scores on the American Psychological Examination for College Freshmen and of Grade XII average marks as predictors of achievement at the end of the freshman

year in the Type C, Arts and Science course. Sosulski (44) is looking into the effects of age on performance on the Wechsler Intelligence Scale for Children. Manning (38) is making a survey of the setting, marking, costs, and the like, of departmental examinations in Canada's ten provinces.

Three theses were more directly concerned with the teacher and with teacher education. Sly (31, 1946) traced the developments in teacher training from its humble beginnings in France, surveyed teacher education as it was carried on in the English-speaking countries, and devoted a chapter in his thesis to Canada. Hume (13, 1946) sought to find the reasons for low salaries, examined salary schedules and trends in various countries, drew up a list of principles upon which salary schedules might be based, and constructed "a reasonable and satisfactory" scale for Saskatchewan teachers. Thordarson (32, 1948) developed a questionnaire purporting to discriminate between progressive and conservative attitudes held by teachers towards racial discrimination, democracy and evolution.

As he was associated at the time with the programme followed by nurses in training in a Saskatchewan hospital, McKinnon (20, 1950) compared on 28 variables those students beginning training in general hospitals with those entering the provincial mental hospitals.

The foregoing brief report of post-graduate thesis work is presented in order to indicate the nature of the research being carried on at the College of Education, University of Saskatchewan, and to give workers in similar fields the opportunity of becoming acquainted with research material available at this University.

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GRADUATE WORK IN MANITOBA

A survey of graduate work undertaken since 1938 when the Faculty of Graduate Studies was first established reveals that there have been granted 55 M.Ed. degrees and 2 Ph.D.'s in Education. There had been a dozen or so previous graduate studies in Education which were awarded the former degree of M.A. in Education. A breakdown of thesis topics is as follows:-

History of Canadian Education	18
Educational Psychology	13
Methods of Teaching School Subjects	10
History of Education	2
Comprehensive Examinations	14

At present there are 54 working towards an M.Ed. and three towards a Ph.D. The thesis topics of the 27 who have already had titles accepted breaks down as follows:-

Educational Psychology	8
History of Canadian Education	7
Methods	7
Philosophy of Education	5
Educational Sociology	2

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Attitudes Expressed By Young People on Teaching as a Career

A PROGRESS REPORT BY PROFESSOR J. D. AIKENHEAD, CALGARY

This research used the questionnaire technique and aimed to probe attitudes causing young people in the last two years of high school and the first two years of college, Normal School, Technical School and university to choose to teach, or not to teach. The study was begun in 1947 in Calgary and later in 1952 extended to cover the four western provinces. Some 3,807 completed questionnaires;—2,186 from high schools and 1,621 from post high school students were secured.. Invaluable help was willingly given by many persons in institutions and Departments of Education. All questionnaires were received by April 1953 when the tabulation and compilation of a report was begun. The Rivers-Jackson¹ study appeared in July 1953 and gives data on all of Canada focussing on Ontario. It's completeness and availability need not be stressed.

As a part of the present writer's research over five hundred studies covering the United States and Great Britain were investigated. They showed that meagre financial return was the most frequent deterrent to teaching. The following items were also often cited in about equal proportion: lack of prestige, insecurity of employment, inadequate guidance, restrictions on personal freedom in some communities, unreasonable community obligations, and the hard work of classroom teaching. For those respondents who planned to teach, a liking for children and young people led the list, with frequent mention of, (a) opportunity for service, (b) some experiences in simple teaching duties, (c) attractive hours and holidays, (d) the persuasion of relatives and friends, as well as, (e) opportunities for self-improvement. The college sample often decided to teach only when they reached the Freshman or Sophomore year.

While the present writer's study is incomplete the data appear to show that young people in western Canada do not have the same view on prestige as their counterparts in the United States. Students in western Canada's schools and colleges do not seem to be given accurate current information on teachers' salaries. For the non-teachers in the high school sample, three discouragements lead the list: the monotony of the classroom, slow promotions, and few highly paid positions in the profession for the better trained persons. Further deterrents were: low salaries, poor living conditions in the country, restrictions on personal freedom, large classes, rude children and parents, a lack of prestige, the hard work of the classroom and the high cost of finishing high school.

For those young people who planned to teach the conclusions are much the same as in Clarke's study,² though the sample is somewhat larger. People teach because they like children and young people

1 Rivers, F. S., and Jackson, R. W. B., "Teacher Supply in Canada," *Canadian Education*, VIII-3: June 1953.

2 Clarke, S.C., "Why Young People Go in For Teaching," *The Alberta Teachers' Association Magazine*, Edmonton, Canada: pp. 10-47; June 1952.

and because the profession offers security of tenure and the security of employment should business ventures fail, or a widow have to teach. The other reasons were stated with less emphasis and include: doing good to other people, the hours of work and holidays, the definite prestige of the profession, satisfactory salaries and sick benefits along with adequate pensions, and the opportunities for travel and self improvement.

The study when completed may not offer final solutions on the crucial problem of teacher recruitment but it will emphasize the studies cited as well as the need for a clearing house on Canadian research.

Faculty of Education 1953-4

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CHILD GROWTH AND DEVELOPMENT IN TEACHER EDUCATION

PROFESSOR GRACE DOLMAGE



The study of Child Development holds a position of growing importance and emphasis in the curriculum of teacher education. Its importance is stressed by various research studies such as those carried out by the Commission on Teacher Education of the American Council of Education, whose final recommendations clearly state that teachers must understand and completely direct child development. The study of human growth and development during childhood and particularly adolescence is to be a basic element in the preparation of teachers and an essential part of any in-service training program.

Studies related to the nature and organization of graduate work in the education of teachers and administrators also press for graduate schools to provide more adequate curriculum facilities relating to the nature of children and adults and the implication of such knowledge to education. Such teaching should synthesize the contribution of medicine, psychology, psychiatry, sociology and education.

As a course of study Child Development is considered to be a body of knowledge about how children grow, develop, behave and learn. The approach is a multidisciplinary one and draws its facts from scientific studies in biology, physiology, pediatrics, sociology, anthropology, psychology. Present day interest in the study of the child is the culmination of an interest which began with educators and biologists of the seventeenth century. There is now a wealth of significant knowledge of child development contributed by each of the sciences concerned with human growth and behavior. These data, underlying principles, and points of view are having profound influence on modern educational theory and practice. It then becomes essential that teachers in training and in service acquire a knowledge of how children grow and learn as a necessary tool of a good educator.

The most important problem for educators is however the implementation of these significant scientific findings in modifying school organization and practice. A consideration of this problem forms the basis of study and research for various groups of students connected with the Faculty of Education, at the University of Manitoba.

For instance, each of the following facts about growth and development have significance for educational philosophy and for teaching techniques but have not as yet been fully implemented.

(a) Growth and maturation takes place rapidly in the early years. Because a young child's mind is so plastic and his growth potential so

great, so his behavior is easily modifiable and responds readily to training.

(b) The principle of readiness stresses that there must be sufficient mental maturation and experience to assimilate or respond to new learning.

(c) Each stage of development has its own characteristic traits. Some times behavior which is considered problem behavior at one stage is actually normal for another stage of growth.

(d) Language is necessary for making satisfactory social contacts. It forms the basis for learning to think, and for acquiring skill in reading, writing and speaking.

(e) Satisfactory social learning in the early years provides for successful citizenship later.

(f) Growth in the various areas is correlated so that rapid development in one area usually indicates that rapid growth in other areas may be expected. The reverse of this is also true.

As an example of research concerning the last item some worthwhile investigations have recently been carried out by individual members of Education classes. Mr. Kahana and Mr. McWilliams, teachers of the Hugh John McDonald junior high school, undertook an interesting study which they entitled "An Examination and Analysis of Some Basic Factors in Child Development". The investigation was confined to an examination of available records on groups of children to discover if any correlation existed between intelligence scores and measurements of height and weight or physical maturity.

The study included a review of some of the published research literature which claimed the existence of such a correlation. The works of Hollingworth, Katz, Terman and Meridith as reported by Hurlock formed the basis of the review.¹

The available scores of four separate groups of junior high school children were analyzed. The grouping represented two groups of ten girls each of high and low mental ability scores and two groups of ten boys each of high and low mental ability scores. The authors pointed out the difficulties of obtaining a large enough sampling due to the limits imposed by a junior high school selection of children.

The mental ability scores were obtained by the school-wide administration of the "Dominion (Omnibus) Test of Mental Maturity, Revised Edition." The height and weight scores were supported by the Physical Maturity Index. This is a formula widely used to assess height and weight scores for classifying students for games and contests to obtain a satisfactory matching measurement.

In analyzing their results the authors stated that, "the group of girls superior in mental ability have a slight but insignificant advantage physically over their duller school mates. As for the boys it is clear that the author's findings fall in line with and confirm those of the outstanding authorities, particularly the results noted by Hollingworth

1 Hurlock, Elizabeth, *Child Development*. N.Y. McGraw-Hill, 1951.

& Meredith, that boys of superior mental ability are also physically superior."

These findings have implications for the philosophy and organization of physical education programs which could bear further research and study.

Other studies by individual students cover challenging topics such as, "The Role of the School in Preventing Delinquency"; "The Educational Values realized from the Home and School Movement"; "An Experiment in Remedial Reading with a Group of Underfunctioning children"; "A Study of the causes of failure with respect to a certain group of repeaters"; "A Sociometric Study of a Classroom to Discover the Pattern of Social Relationships Among the Students".

It is hoped that as teachers become aware of the various principles of child growth and development and acquire skill in testing these principles in relation to their implementation, they will eventually provide a more adequate education for all children.

SUMMER SCHOOL, 1953

General Report

Ten courses were offered to the largest class ever attending Summer School. The 126 students came from all over the Province, most of them entering Winnipeg from divers villages and towns. Seventy of these students registered for two courses and 56 for one course.

Despite the hard work necessary, and the diversity of backgrounds from which the students came, a friendly, congenial atmosphere prevailed. Enthusiasm was evident all-round.

Due to bad weather and distance, not many sports activities could be planned by the sports committee. One softball game was scheduled and played against the Normal School, ending with a score of 13-0 for the Normalites. Whether this defeat discouraged our committee or whether no occasion turned up, no other chance was found for a return match. The sports committee afforded many chances for volley ball enthusiasts and basketball devotees to exercise themselves. Tennis and golf were also on the agenda.

Although six weeks is a short period, the social committee found occasion to organize two affairs. The first, a wiener-roast and dance damped somewhat on account of rain, and the second — a grand success — was a final wind-up lunch at Moores. At the head table, and presiding, was our devoted dean, N. V. Scarfe. Next to him, on either side, were Father Meagher, S. J., and Irvin Lehmann. At Irvin's left sat Dr. Maccia and his wife. On the right of Father Meagher sat Dr. J. Katz. Irvin, the President of the Student Council, asked the Vice-Pres., Miss Audrey Jones, to present a toast, which was characteristically accepted, and well answered, by Prof. Katz.

Dean N. V. Scarfe ended the gathering with a brief talk, bringing forth a series of significant comments on the Manitoba Faculty of Education. He praised his colleagues by saying that there were four good Profs. on the staff, but was later reminded by Irvin, who said that actually there were five good Profs. Our Dean brought out also the encouraging fact that our Faculty was well known, recognized for its merits, and well represented in the educational fields. Finally, his short talk came to an end with an assurance to Summer School students that their efforts would be successful, as they would all most probably pass. This was a nice note on which to end the gathering.

To our officers who represented us on the Council, and mostly to the President, and to the staff of the Faculty of Education, we owe abundant gratitude.

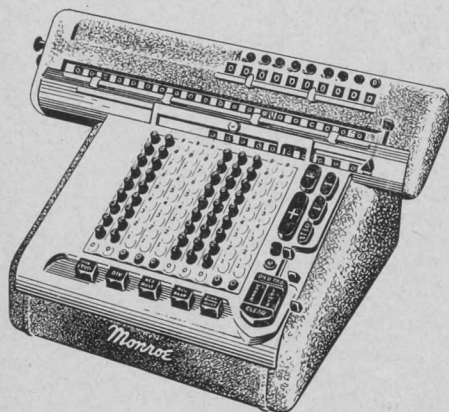
The council consisted of the following members:-

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Social Situations In Comic Books

PROFESSOR JOSEPH KATZ

The Problem

Comic books undoubtedly compete with literature texts for the students' time. That this competitive situation has been drawing the attention of parents, and even of the pulpits and the courts is attested by the frequency of newspaper reports. More important than these reports, however, is the question why students continue to read comic books in sizeable numbers, whereas school literature texts are left in the lobby, at home, or in the school desk. Pollock¹ looked at this problem and defined it in terms of the social situations obtaining in both classes of literature. The definition of social situation used for the study was, "the state of affairs at a given moment caused by interdependent persons or interdependent persons and things which could be a basis for action."

The Method

Nine distinct types of comic books were selected to be representative of a variety of types available on local newsstands. In addition, selections were taken from the grade seven, eight, and nine literature texts. In all, twenty-five comic books and an equal number of library selections were examined, analyzed, and studied comparatively.

The Comic Books

Study of the frequency of the most common social situations found in the comic books showed: an elder reprimanding a person younger or lower in rank (10 times); a person made a laughing stock by his own actions or actions of others (44); an attempted or actual killing (19); individuals faced with fear (24); a person or persons being captured (16); robbery (11); fighting (15); men or boys conversing (32); men or boys conversing with women or girls (41); planning for a future activity (13); and, individuals playing tricks on a member of the group (13).

In one type of comic book analyzed it was found that kissing and embracing occurred as a social situation fifteen times; a man and a woman were found car-riding five times; a woman underwent emotional anguish in twelve situations; a member was ostracized from a group eight times, and pseudo-scientific material was presented as background nine times.

The School Literature

Analysis of the selections from school literature revealed the kinds of social situations to be found. Here there were nine references to an elder reprimanding a person younger or lower in rank; fourteen references to one person being made a laughing stock; six references to an actual or attempted killing; five references to a hunting party; six refer-

¹ Harold Pollock. *Social Situations in Comic Books and Junior High School Literature Compared to Account for the Difference of Interest to Students*. Winnipeg, Unpublished Term Paper. University of Manitoba, 1953, pp. iii-66.

ences to fighting; seven references to an individual or individuals facing a fearful situation; eleven references to an individual acting generously; eight to an individual outsmarting others by using his wits; seven to an individual making a bargain; nine to a person acting with courage in face of difficulty; thirty-five to men conversing with men; sixteen to men conversing with women; nine to women conversing with women; ten to people eating; six to individuals volunteering for a difficult task; five to an individual becoming an outcast; and, six to a person becoming a welcomed member of a group.

Similarities and Differences

1. Of the eleven major social situations found in the comic books, seven were also found in the school literature, and the remaining four were found at least once.
2. Of the seventeen major social situations found in the literature, seven were found in the comic books.
3. Comic book social situations appear to lay more stress on physical powers than do the school literatures.
4. Twenty-five stories in the literature yielded 323 social situations, whereas twenty-five stories in the comic books yielded 506 social situations.
5. School literature selections have more frequent reference to generosity, to the use of mental powers, to volunteering to do a difficult task, to hunting, and to women conversing with men present.
6. Comic book heroes and heroines are seldom assailed by doubts. They are sure and swift and successful. By contrast, the heroes of school literature tend to hesitate before plunging into adventure.
7. Comic books provide more social situations in which the fanciful plays a part than do those of school literatures.
8. Horror, mystery, and space travel appear in the social situations of comic books in a way in which they do not appear in school literatures.

The Real Problem

Those who read comic books are undoubtedly possessed of a hunger for adventure. The comic books present actions in sufficient quantity, and with sufficient graphicness to help satisfy this craving. That the social situations in the comic books at times fanciful, and at times unreal, only serve to meet the needs of readers who are uncritical of the sharp black and white pictures painted. The social situations to be found in school literatures are in many instances identical with those to be found in comic books, but the difference in emphasis, the difference in the medium of communication, only tends to emphasize the differences bearing upon the reader's desire for quick, sure, and swift action. The reader of the comic book wants action, and in the comic book he gets it. The problem facing the school is what literature to select for the junior high school that will serve to meet the challenge posed by the comic books. And that challenge can only be met by introducing literary selections that make use of action in comparable measure.

Graduate Research Papers

PROFESSOR H. L. STEIN

The average term paper presented by graduate students to complete the requirements of a course in Education does not normally go much beyond a thorough and critical review of the literature, although the better term papers are based upon a fair amount of objective and original study. Occasionally, too, a graduate student does present an outstanding piece of work in the nature of original research. This article will present in summary form some examples of such outstanding presentations so that students who are interested in this kind of follow-up to their course work may have some sort of yard-stick by which to measure their own term paper efforts.

1. "A Comparison of Athletic and Non-Athletic High School Girls to Discover what Relationships Exist Among Factors of Academic & Social Development and Participation in Athletics." Audrey E. Jones, Course 202, June 1953; 40 Pp.

The purpose of the study was to determine whether or not athletic girls differed significantly from non-athletic girls in personal, social attributes and academic ability & achievement, and to determine by inference which might be the interaction of these factors in their total development.

The method involved setting up two criterion groups, each of 25 girls, one athletic, the other non-athletic, on the basis of a wide variety of athletic activities. The groups were matched for age and grade. They were then compared for physical characteristics, such as height, weight, pubescence, and disabilities; scholastic achievement; home background; personal habits; religious affiliations; record of conduct; school activities; and recreational interests.

The findings are extremely interesting. On the average the onset of pubescence is about three months earlier in the athletic group than in the non-athletic group. This difference is not significant, but it indicates a trend. The academic averages of the athletic group ranged from one to nine percentage points higher than the non-athletic group. Most of the differences were significant and they invariably favored the athletic group. "The convincing margin held by the athletic group might be interpreted as the result of their greater interest in certain school activities, which gives them a greater incentive to attend school regularly in order to participate in these activities."

In comparing home backgrounds, the athletes come from larger families in which fewer mothers were working. "This might be indicative of a greater feeling of belonging and of possessing a stronger feeling of security". Fifty-six per cent of the athletes held part-time jobs compared with twenty per cent of the non-athletes.

Only twelve per cent of the athletes smoke as compared to over fifty per cent of the non-athletes. "We may justifiably assume that they (the athletes) have been more susceptible to the teaching of approved health habits"

The athletes are far more active in church activities than are the non-athletes. They attend more frequently to Sunday School, singing in the choir, church and Young People's Organizations, and they lead youth groups more frequently. "This may be taken as a good indication of a more widely developed social maturity among the athletic group."

In out-of-school activities the non-athletic group attend twice as many movies as their athletic counterparts. The boy friend situation is about the same for both groups. Three times as many athletes as non-athletes have musical interests and activities outside of school. Only one athlete did not have at least one outside club association; seventeen of the non-athletic girls had no outside interest whatsoever.

Evidence has been produced, then, to show that the athletic group has achieved greater excellence both academically and socially than the non-athletic group. "One of the aims of Physical Educators is to form well rounded personalities. Therefore it is justifiable to assume that participation in physical education activities has contributed to the demonstrated superiority of the athletic group by developing in them a more fully rounded personality than in the non-athletic group."

2. "An Application of the Analysis of Variance to Test the Homogeneity of Achievement among Third and Fourth Years Arts & Science Students Entering the Faculty of Education." Aubrey Asper, Charles Henry, Irving Lehman and Harold Pollock. Course 201, August 1953.

The purpose of this study is to show (a) that there is no significant difference in achievement, as measured by their attainments in the third and fourth years of Arts and Science, among Education Students from year to year, and (b) that Education students compare favorably in achievement with the general body of students in Arts & Science.

The method of investigation is statistical and utilizes the analysis of variance. Prior to comparing the achievement of the classes from year to year it was necessary to test the hypothesis of homogeneity of variance. This was accomplished by the well known L test for homogeneity of variance by Welch and Roger. Once the homogeneity of variance was established, the analysis of variance was used to test the hypothesis of non-significance of differences in achievement among and between Education years and between Education & Arts & Science students in General.

The findings, which resulted from the searching of a mass of records in the Registrar's office, the tabulation and statistical treatment of the data, were: (1) Education students do not vary from year to year in their background of achievement in their studies in the Third and Fourth years of Arts and Science. (2) More than fifty per cent of Education students achieved higher than the 50th percentile of their corresponding groups in Arts & Science. (3) Education draws relatively few students from the upper twenty-five per cent of the graduating class.

3. "A Study of the Reliability and Item Validity of the Term Examinations in Education I." Mary McGarry and Marguerite Perillat, Course 206, March 1953.

The purpose of this study was to evaluate the mid-year examinations in Education I from the point of view of their item validity and internal consistency or reliability.

The method involved the use of the Hoyt modification of the Kuder-Richardson formula for determination of test reliability, and the R. L. Thorndike technique (Product-Moment) for evaluating item validity. A complete worksheet was built up for each of the examinations, all of which were objective, and the item validity and test reliability determined from this sheet.

The findings of this study are expressed in a series of tables giving the validities of all the items in the various tests, together with the test reliabilities. Coefficient of reliability ranged from .10 to .73. An average of about 40 per cent of the items in the various tests were rated as having unsatisfactory discriminating power as between good and poor achievers.

4. "An Analysis of the Results of the Mooney Problem Check List Administered to 153 Adolescents at Centennial School with their Application to a Guidance Program." A. F. Brown, G. M. Brown, and W. S. Lint, Course 724, August 1953.

The purpose of this study was to analyze the problems of adolescents in the secondary school as a means of improving the guidance program of the school.

The method involved the administration of the Mooney Problem check list (High School form, 1950) and the setting up of Norms for the various categories of the list. The reactions of 153 adolescents to the opportunity of identifying and discussing their problems were analysed and norms were set up for grade, age, and sex classes. Graphs and charts for all categories are presented to facilitate further analysis. Comparisons were also made on the basis of course selection. Correlation techniques were used to determine the degree of relationship between specified problem areas.

The findings are included in a series of revealing tables and charts which give the typical problems at various age and grade levels for different courses and the sexes. The implications for guidance are set out in the concluding chapter. They reveal the need for both group and individual guidance for early adolescents in such areas as social and recreational adjustment and adjustment to school work. For later adolescents Personal Psychological Relations, Finances, Living Conditions and Future Employment present the most serious problems. The study closes with a long list of very pertinent restatements of conclusions and recommendations.

Consensus Definitions And Their Implications For Teaching Philosophy of Education

PROFESSOR GEORGE S. MACCIA

Introduction and Purpose of the Study

The importance of a thorough knowledge of philosophies of education with their consequent implications in educational practice has been assumed. The current popular pastime of indictments and criticisms of educational practice, and the confusions which characterize such reports and discussions attest the need for clear, concise thinking about what is intended and practiced in Canadian public schools. Basic to intention and practice in education is the philosophy underlying them.

Educational Philosophy, like the Philosophy of Esthetics, and Political Philosophy, is a specialized area of General Philosophy. Understanding of Educational Philosophy is concomitant with understanding of General Philosophy. Therefore, it is imperative that the instructor in Philosophy of Education know the general philosophical concepts of the students. The instructor should follow the maxim, "Begin where the students are, not where he would like them to be", if he wishes to avoid leaving the student with hopelessly vague generalities or descriptions of practice void of any real understanding of philosophical frames. By knowing where the students are, the instructor of Philosophy of Education will be better able to correct any existing erroneous concepts, thereby helping the student obtain the basic concepts necessary for a scholarly analysis of educational thought and practice.

This study was undertaken to determine what the terms, "Realist", "Idealist", and "Pragmatist" mean to the student, and thus discover whether these philosophical concepts were adequate for use in studies of the Philosophy of Education.

The Method of the Investigation

During the initial meeting of the Philosophy of Education class, the students were given three blank sheets of paper. They were asked to define the terms, "Realist", "Idealist", and "Pragmatist" in words which would be meaningful to someone who had not studied philosophy. They were further instructed to leave the sheet blank if they felt they could not supply a definition.

From the 48 sets of definitions received, the consensus definitions of the three terms were evolved by the investigator. They were stated as follows:

1. The Realist is a person who sees things as they really are. He accepts a situation as it is, and tries to make the best of it.
2. The Idealist is a person who is guided by the aims and ambitions he has set up as an ideal. He is visionary and views the world as he wishes it were, rather than as it is. His preoccupation with optimistic dreams tends to make him impractical.
3. The Pragmatist is a person who accepts the useful as true. Thus, his actions are governed by that which has direct application in the present situation.

Before anything was said about these or any other philosophical concepts, the students were asked to read each definition and either accept the definition as it was stated, to accept it with modifications, or to reject it completely. The results were tabulated and Chi Square test for significance was applied. Chi Square was used to determine the probability that the consensus definition actually represented the group's intended meaning of the three terms.

Results of the Investigation

In each case the "Null Hypothesis" was stated as follows: "Would the divergence between the observed results from the expected results be insignificant and therefore be accounted for solely by sample fluctuations?"

I. CHI SQUARE TEST ON THE DEFINITION OF A "REALIST".

	ACCEPT	MODIFY	REJECT	
f_o	23	20	5	48
f_e	16	16	16	48
$f_o - f_e$	7	4	11	
Corr. (-.5)	6.5	3.5	10.5	
$(f_o - f_e)^2$	42.25	12.25	110.25	
$(f_o - f_e)^2$	2.64	0.76	6.89	
f_e				

$$X^2 = 10.29$$

$$df = 2$$

$$P = .01$$

"Null Hypothesis" is rejected at the 1% level of significance.

II. CHI SQUARE TEST ON THE DEFINITION OF AN "IDEALIST".

	ACCEPT	MODIFY	REJECT	
f_o	21	22	5	48
f_e	16	16	16	48
$f_o - f_e$	5	6	11	
Corr. (-.5)	4.5	5.5	10.5	
$(f_o - f_e)^2$	20.25	30.25	110.25	
$(f_o - f_e)^2$	1.26	1.89	6.89	
f_e				

$$X^2 = 10.04$$

$$df = 2$$

$$P = .01$$

"Null Hypothesis" is rejected at the 1% level of significance.

III. CHI SQUARE TEST ON THE DEFINITION OF A "PRAGMATIST".

	ACCEPT	MODIFY	REJECT	
f_o	38	4	0	42
f_e	14	14	14	42
Note: No response from six persons.				
$f_o - f_e$	24	10	14	
Corr. (-.5)	23.5	9.5	13.5	
$(f_o - f_e)^2$	452.25	90.25	182.25	
$(f_o - f_e)^2$	32.3	6.44	13.01	
f_e				
$X^2 = 41.75$		$df = 2$	$P = .01$	

"Null Hypothesis" is rejected at the 1% level of significance.

From the large value of X^2 in each instance it is evident that the results obtained to reveal a significant trend of opinion for the meaning of the terms "Realist", "Idealist", and "Pragmatist".

Since the class was composed of individuals with and without previous experience in philosophy courses, it was considered advisable to determine the relationship between the consensus definitions and each of the two categories of individuals. It was felt that such relationships might reveal, as we would expect, a significant difference in consensus definition between those people who had studied philosophy and those who had not.

I. CHI SQUARE TEST ON THE DEFINITION OF A "REALIST".

With the Group Who Have Had Courses in Philosophy.

	ACCEPT	MODIFY	REJECT	
f_o	13	10	4	27
f_e	9	9	9	27
$f_o - f_e$	4	1	5	
Corr. (-.5)	3.5	0.5	4.5	
$(f_o - f_e)^2$	12.25	2.5	20.25	
$(f_o - f_e)^2$	1.36	0.8	2.25	
f_e				
$X^2 = 3.89$		$df = 2$	$P = .20$	

"Null Hypothesis" is affirmed. X^2 is not significant. It cannot be stated that this group shows a strong preference for or against the consensus definition.

II. CHI SQUARE TEST ON THE DEFINITION OF AN "IDEALIST".

With the Group Who Have Had Courses in Philosophy.

	ACCEPT	MODIFY	REJECT
f_o	9	14	4
f_e	9	9	9
$f_o - f_e$	0	5	5
Corr. (-.5)	0	4.5	4.5
$(f_o - f_e)^2$	0	20.25	20.25
$(f_o - f_e)^2$	0	2.25	2.25
f_e			
$X^2 = 4.50$	$df = 2$		$P = .10$

"Null Hypothesis" is affirmed.

III. CHI SQUARE TEST ON THE DEFINITION OF A "PRAGMATIST".

With the Group Who Have Had Courses in Philosophy.

	ACCEPT	MODIFY	REJECT	
f_o	22	2	0	24
f_e	8	8	8	24
Note: Three students did not respond.				
$f_o - f_e$	14	6	8	
Corr. (-.5)	13.5	5.5	7.5	
$(f_o - f_e)^2$	182.25	30.25	56.25	
$(f_o - f_e)^2$	22.78	3.78	7.03	
f_e				
$X^2 = 33.57$	$df = 2$		$P = .01$	

"Null Hypothesis" is rejected at the 1% level of significance.

X^2 is significant. It may be stated that this group shows a strong preference for the consensus definition.

The findings from the testing of the preference for the consensus definition by the group of students who had not taken previous courses in Philosophy revealed equally interesting results.

I. CHI SQUARE TEST ON THE DEFINITION OF THE "REALIST".

With the Group Who Have Not Had Courses in Philosophy.

	ACCEPT	MODIFY	REJECT	
f_o	10	10	1	21
f_e	7	7	7	21
$f_o - f_e$	3	3	6	
Corr. (-.5)	2.5	2.5	5.5	
$(f_o - f_e)^2$	6.25	6.25	30.25	
$(f_o - f_e)^2$.89	.89	4.32	
$\frac{f_o - f_e}{f_e}$				

$$X^2 = 6.10$$

$$df = 2$$

$$P = .05$$

"Null Hypothesis" is rejected at the 5% level of significance.

II. CHI SQUARE TEST OF THE DEFINITION OF AN "IDEALIST".

With the Group Who Have Not Had Courses in Philosophy.

	ACCEPT	MODIFY	REJECT	
f_o	12	8	1	21
f_e	7	7	7	21
$f_o - f_e$	5	2	6	
Corr. (-.5)	4.5	1.5	5.5	
$(f_o - f_e)^2$	20.25	2.25	30.25	
$(f_o - f_e)^2$	2.89	0.32	4.32	
$\frac{f_o - f_e}{f_e}$				

$$X^2 = 7.53$$

$$df = 2$$

$$P = .05$$

"Null Hypothesis" is rejected at the 1% level of significance.

III CHI SQUARE TEST OF THE DEFINITION OF A "PRAGMATIST".

With the Group Who Have Not Had Courses in Philosophy.

	ACCEPT	MODIFY	REJECT	
f_o	16	2	0	18
f_e	6	6	6	18

Note: Three people did not respond.

$f_o - f_e$	10	4	6
Corr. (-.5)	9.5	3.5	5.5
$(f_o - f_e)^2$	90.25	12.25	30.25
$(f_o - f_e)^2$	16.70	2.04	5.04
f_e			

$$X^2 = 23.78$$

$$df = 2$$

$$P = .01$$

"Null Hypothesis" is rejected at the 1% level of significance.

Conclusions of the Study

The fact that the students formulated definitions indicated that concepts of "Realist", "Idealist", and "Pragmatist" were not lacking. From the point of view of philosophical expositions, however, the concepts stated are not only erroneous, but contain unwarranted value judgments. As born out by the Chi Square test of significance, the group as a whole show a decided tendency to accept the definitions as stated. It is not, of course, surprising that they should do so, for the definitions themselves emerged from their own expressions.

The message to the instructor of Philosophy of Education is clear. Clarification of the meaning of these philosophical frames is essential if students, as students, (and what is more important, as practicing teachers) are to understand Philosophy of Education.

The results of the test of the significance on the consensus definition, when those students who have had courses in General Philosophy were considered separately from those who have not had courses in General Philosophy, indicated that the former group does not have a decided tendency to accept the definitions of "Realist", "Idealist", and "Pragmatist". The latter group, however did show such a tendency.

As we would expect, study in General Philosophy would bring to the student of Philosophy of Education a more adequate understanding of the concepts involved. Thus, students preparing for teacher training

should take courses in General Philosophy. If a requirement for prior study in Philosophy is not feasible, the time devoted to the study of Philosophy of Education should be increased. Such recommendations as these are, at present, merely long range possibilities. What could be done now?

From the analysis of the findings of this study, it is clear that we cannot assume, as may be possible elsewhere, that Faculty of Education students at the University of Manitoba come to us prepared to study Philosophy of Education as a specialized course.¹ Obviously, "We must begin where the students are" and do our best to meet the inadequacies of their philosophical comprehensions within a setting of educational theory and practice.

Perhaps, the most significant finding of this study, which we did not expect, was the virtually certain probability that the consensus definition of the "Pragmatist" reflects the thinking of the group regardless of previous study in philosophy. What accounts for this striking divergence? We may only hazard a guess. It would seem that the philosophy of Pragmatism has much less significance for General Philosophy than it has for Educational Philosophy in Canada. Therefore, it might be expected that Pragmatism would receive little or no treatment in the usual introductory courses in General Philosophy. The fact that Pragmatic Philosophy of Education has considerable significance in Canadian elementary and secondary education is evident from the current criticisms and attacks upon Canadian Public Education. These criticisms rest their arguments on just such misleading conceptions of the meaning of Pragmatism as is evidenced in the consensus definition of this study. Surely, if enlightened consideration is to be given as to the worth of Pragmatic theory and practice in education an adequate understanding of the meaning of Pragmatism as intended by Pragmatic philosophers should replace erroneous conceptions promulgated by critics of Pragmatism. The instructor in Philosophy of Education should endeavor to bring about understanding of the meaning of the Pragmatic frame in education so that students and teachers will be able to think through issues involving Pragmatism, using their rational capacities with a minimal of visceral feeling tones.

In summary, philosophical concepts of the terms "Realism", "Idealism", and "Pragmatism" must be clarified if a precise understanding of their implications in educational theory and practice is to be obtained.

It would seem that prescribed courses in General Philosophy would make for greater clarification of the meanings of philosophical frames. Since, meeting this requirement does not seem likely in the immediate future, the instructor in Philosophy of Education should attempt to locate misconceptions about philosophical frames, and help the student rectify such misconceptions. From the findings of the meaning of "Pragmatist" it would appear that clarification of this frame is essential if the student is to evaluate analytically and justly the implications of Pragmatism in Education.

¹ Faculty of Education students have been shown to be representative of the student body in other Faculties at the University of Manitoba. Dr. Harry L. Stein. See pp. 13-21.

ATTITUDE TESTING IN GEOGRAPHY

DEAN N. V. SCARFE

Research students both in England and in Canada have at various times in recent years attempted to experiment with attitude testing despite the known difficulties and problems surrounding this type of work. The research has been largely undertaken in connection with a larger project concerned with the improvement of geography curricula and teaching methods. The geography is, however, relatively incidental to the present discussion, though it is necessary to explain why research of this type was undertaken.

Although it can be assumed that geographers all over the world are fairly well agreed as to the general content of a school geography course from grade III or IV to grade X or XI, very little is known about what portions of the total course are best taught at each grade. Teachers have from time to time experimented in the classroom and have discovered that certain topics, certain ideas and certain concepts are too difficult for lower grades, but no one has discovered any scientific data which would provide precise criteria for deciding what is suitable for each grade.

Obviously one way was to try to discover what portions of the geography content attracted most interest and seemed most understandable at each level. To do this meant trying to find out from children themselves how they felt about certain topics or ideas. Thus began a very difficult and often disappointing experiment with attitude tests.

First the experimenters accepted certain notions or hypotheses propounded by previous thinkers. It was said, for instance, that physical geography was unsuitable and uninteresting for elementary children, whereas human geography was more interesting and more easily comprehensible. To test this, and other hypotheses, five main types of geography were selected and for each type five simple but authoritatively acceptable statements were framed. A large number of children of various ages were then asked to express their likes or dislikes for each item on a five point scale following the Likert technique of attitude assessment.

The test and the rating scale used by D. B. Bartlett in London, England, and later by G. Sim and G. O. Zado in Winnipeg, Canada, is as follows:-

GEOGRAPHY QUESTIONNAIRE A TEACHERS' INSTRUCTIONS

May I enlist your help in the enclosed experiment? It is a questionnaire designed to find out from children between grades VII and XII what topics in geography interest them. Would you be kind enough to give the test to as many classes as you can? The children's answers should be on sheets like the one provided. Please see that the questionnaire paper is not marked or defaced so that it can be used by many different classes and, if possible, different schools.

Read through the instructions at the top of each questionnaire with the children to make sure that they understand what to do and where to put the check on the paper. Read the questions through in turn as they answer them so that the class keeps together and the time taken by all the pupils to answer each questionnaire is roughly the same. Encourage the children to state their feelings freely, fully and honestly.

CHILDREN'S INSTRUCTIONS QUESTIONNAIRE A

On this paper there are 25 topics, each of which could form the subject for several geography lessons. Each group could form the subject for a term. They are numbered A1 to E25. Indicate on the answer paper how you feel about each topic by putting a check in the square which shows your feeling. If you have never studied the topic, show how you feel about it nevertheless.

BE AS FRANK AS YOU CAN IN YOUR ANSWERS. THERE IS NO NEED TO PUT YOUR NAME ON YOUR ANSWER PAPER. ONLY PUT YOUR CLASS AND **AGE** AND SAY WHETHER YOU ARE A BOY OR GIRL. DO NOT WRITE ON THIS SHEET.

- A.
 1. The way people live in different parts of the world.
 2. How the kind of country affects what they do for a living.
 3. What effect different climates have on the way people dress.
 4. Reasons why some countries are more densely populated than others.
 5. Different types of towns and villages in various parts of the world and why they are different.
- B.
 6. A study of the different countries in a continent.
 7. What the landscape looks like in those various countries.
 8. How differences in landscape make people's occupations different.
 9. The distribution of hills and valleys, mountains and plains and their effect on transport and routes.
 10. How rocks, soil and climate affect what farmers grow in various parts of the world.
- C.
 11. How the shape of the earth is altered by water, wind, ice and frost.
 12. What causes different kinds of weather, for example, today's weather or monsoons in India.
 13. The way river systems grow and the work they do.
 14. How mountains are made.
 15. How changes in scenery are caused by different types of rock under the surface.
- D.
 16. Where different crops are grown over the world and why they are grown.
 17. The world production of coal and oil and how they are produced.
 18. Problems of world shipping, canal charges, routes and coaling stations.
 19. The chief exporting and importing countries of the world, particularly those trading with Canada.
 20. World timber supplies and the uses of wood in world commerce.
- E.
 21. How to draw maps, diagrams and graphs to illustrate geography work.
 22. Outdoor map study, learning what maps show and how to find your way.
 23. How to make weather observations; keeping daily records of weather.
 24. A detailed study by visits and independent outdoor work, of your home town region —its rocks and relief, climate, trade and occupations.
 25. A study of the geography behind the events in the daily newspapers; where the places are, collecting pictures and cuttings about them.

ANSWER SHEET

Boy or Girl	Class		Age		Years	Months
No. of Question	Like Very Much	Like	Un-decided	Dislike	Dislike Very Much	Leave Blank
1.						
2.						
3.						
4.						
5.						
etc.						

All these experimenters were very conscious indeed of the imperfections of the test and of the technique. They do not make any rash claims or draw definite conclusions except about the difficulty of drawing conclusions. However, it is of interest to compare the results obtained by the three workers operating in entirely different cultural and educational situations.

TABLE OF RAW SCORES

A—Human Geography. B—Regional Geography. C—Physical Geography.
D—Economic Geography. E—Practical Geography.

Grade VII					Grade VIII				
English		Canadian			English		Canadian		
Boys	Girls	Boys	Girls		Boys	Girls	Boys	Girls	
A	2.4	2.1	2.4	4.0	A	2.2	3.0	2.9	4.2
B	2.2	1.2	2.2	2.6	B	1.8	2.0	2.8	2.6
C	3.3	2.6	3.7	4.0	C	3.7	3.4	3.1	2.2
D	3.8	1.2	2.1	1.7	D	3.4	1.7	3.3	2.3
E	5.0	3.6	2.7	2.4	E	4.6	4.9	2.8	4.1
Grade IX					Grade X				
English		Canadian			English		Canadian		
Boys	Girls	Boys	Girls		Boys	Girls	Boys	Girls	
A	1.8	2.7	3.6	4.5	A	1.7	3.2	2.0	3.4
B	1.7	1.9	3.5	1.9	B	1.4	2.0	2.7	2.1
C	3.2	3.1	4.2	3.1	C	3.0	2.4	3.9	1.4
D	2.6	0.7	3.8	1.9	D	2.4	1.1	2.8	1.7
E	3.9	5.1	3.6	2.7	E	4.3	5.8	1.3	1.2
Grade XI					Grade XII				
English		Canadian			English		Canadian		
Boys	Girls	Boys	Girls		Boys	Girls	Boys	Girls	
A	1.4	3.6	2.1	3.4	A	1.8	3.5	2.5	3.4
B	1.4	1.8	1.5	.3	B	2.0	2.3	2.0	1.5
C	2.4	1.8	1.1	1.8	C	1.6	2.2	2.6	1.2
D	2.6	1.8	1.2	.6	D	2.1	1.9	1.9	1.1
E	4.6	4.6	.6	1.0	E	4.0	5.2	.2	1.6
All Grades									
English		Canadian			English		Canadian		
Boys	Girls	Boys	Girls		Boys	Girls	Boys	Girls	
A	1.9	3.0	2.7	3.7					
B	1.7	1.9	2.6	1.8					
C	2.9	2.6	3.2	2.2					
D	2.8	1.4	2.6	1.6					
E	4.4	4.9	2.1	2.0					
Av.	2.7	2.7	2.6	2.3					

It is unnecessary here to go into the exact method of scoring the results, for most people are familiar with the method of averaging

results from a five point scale. Suffice it to say that although scores happen to be positive the possible range is from +10 to -10. Had **all** liked a group of topics **very much** the score would have been +10. Had they **all** disliked it very much the score would have been -10.

The tentative conclusions to be drawn are that the division of geography into different types has little meaning for children. Their interests do not follow any set pattern based on the division of subject matter simply on content lines. Nevertheless there is a discernable pattern of interest based on quite a different division. Descriptive geography is preferred to that involving relational reasoning. The difficulty of each concept and the complexity of thought required exercise a marked influence on children's likes and interests. Content is never separated from the difficulty of the concepts involved, nor from the methods of teaching accompanying it. Children are in fact much more concerned about methods of teaching than about pure content. Changing curriculum content or topics, without changing the method of approach and teaching techniques, is valueless.

There are, however, a number of interesting side issues involved in this study. Some results are common to both sides of the Atlantic. These are particularly significant for any who wish to test the validity of the results. The high degree of similarity between the two sets of scores also tends to confute many arguments raised against attitude testing with school children.

The items where the English and Canadian scores differ are also of significance for it is believed that the different social pattern and the different educational background of the children help to explain the differences. Why, for instance, are English children so interested in practical work with maps indoors or with field work outdoors when Canadian children show a relative distaste for such things?

All children at all ages and in both countries seem to like very much to study "the way people live in the different parts of the world". This is specially true of girls and of Canadian boys. All children of all ages and in both countries enjoy "outdoor study with maps". This especially true of English children particularly the boys. Other topics which seemed to attract interest regardless of age were "how mountains are formed"; this was specially true of English children. The study of the home area and of topical events was liked by girls much more than by boys. So too was the topic involving the effect of climate on dress. Boys showed no liking for the distribution of crops, while girls lacked interest in shipping, coal and oil. Physical geography in general was less interesting to girls than boys. Although there was no evident dislike of practical work with maps among Canadians the outstanding point of difference between the two was the tremendously greater liking for it by English children. The opposite contrast, though perhaps not in so great a degree, was found in the question involving reasons for density of population. In summary it can be said that human geography is twice as popular in Canada as in England while physical geography is twice as popular in England as in Canada. In the case of practical work the popularity is four times as great in England as in Canada. Economic and regional geography are not very popular in either country.

In general English children like geography slightly better than Canadians, but in both countries there seems to be a falling off of interest as they grow older.

The follow-up of this test done by M. Long in London and K. Allen in Winnipeg also shows very interesting correlations. The weaknesses of the first test were to some extent eliminated and a more precise form of enquiry established. Nevertheless, the attitude test left much to be desired and still further investigations will be necessary before anything very useful can be formulated. The tests do, however, illustrate very clearly the need for someone to start with the trial and error type of research and progress by stages through the cooperative effort of successive groups of research workers. With each step we march nearer to a more effective testing technique and eliminate many unforeseen difficulties.

The second test with comparable results are set out below.

GEOGRAPHY QUESTIONNAIRE B — TEACHERS' INSTRUCTIONS

In this test there are two five point scales both requiring children to express their views as honestly and truthfully as they can. We rely on you to obtain that kind of atmosphere. The first half of the test really attempts to ask, "How interested are you in" and the second, "How much do you think you know about" You will see that we are out to find out not their attitude to any particular topic or special area, although, in order to keep the test geographical we have had to suggest certain examples, but their attitude to **what, how, where** and **why** — i.e. their attitude to certain mental processes involved in presenting geography to classes. Please read these questions to the class slowly,

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emphasizing (if necessary by repetition) the words underlined so as to ensure that the answers are related to the words underlined and not to the rest of the sentence which has samples only and which you may amplify if you wish by closely similar samples or topics better known to the children.

We would like you to do the two tests simultaneously allowing the children after each question to put a check in the appropriate column of interest and then the appropriate column of knowledge.

Please issue the questionnaires and answer sheets one to each child, and read the following statement to them. Please do not add anything, or omit to make sure that all hear the statement.

"Here is a short questionnaire which we have been asked to give you. It is being given to many schools in order to find out the honest opinions of boys and girls about geography so that, with the information you give, the subject may be taught more to your liking. Be as honest and truthful as you can because your opinion is important. This is not an examination or a test, but a simple inquiry to help teachers."

GEOGRAPHY QUESTIONNAIRE B — PUPILS' INSTRUCTIONS

Below you will find 25 different statements about geography. You are asked to state, as honestly as you can, by means of a check on the answer sheet provided, your interest in the statements and how much you think you know about them. Do not put your name on your paper, but fill in your age and sex where indicated.

- A. 1. WHERE such things as rice or tea or coal or iron are produced.
2. IN WHAT COUNTRIES such things as typhoons, or droughts, or very heavy rainfall occur.
3. IN WHAT COUNTRIES there is grassland or forest.
4. WHERE towns such as New York or Buenos Aires or London are.
5. WHERE the mountains or plains or rivers of the world are.
- B. 6. A DESCRIPTION of the life of such people as a lumberjack in Canada, or a sheep farmer in Australia, or a fisherman in the North Sea.
7. A DESCRIPTION of vegetation in various parts of the world such as the Steppes, or the Equatorial Forests.
8. WHAT the weather IS LIKE in different parts of the world, such as in England or in China, or in Central Africa.
9. A DESCRIPTION of the scenery on a journey through such places as Quebec or Argentina, or India.
10. WHAT the houses or villages in such places as Eastern U.S.A., or Japan, or Scotland LOOK LIKE.
- C. 11. THE GEOGRAPHICAL ADVANTAGES for the manufacture of iron and steel in Pennsylvania, or cotton in New England.
12. HOW climate MAKES A DIFFERENCE to the kind of houses in which people live.
13. HOW rocks and soil AFFECT what farmers grow.
14. WHAT natural conditions FAVOR THE GROWTH of towns such as Manchester, Vancouver or Sydney.
15. THE EFFECT OF mountains or valleys ON THE POSITION of roads or railways.
- D. 16. HOW we get cloth from England, or rubber from Malaya.
17. THE WAY IN WHICH rice is grown, or silk produced.
18. HOW iron ore is smelted, or HOW cotton is manufactured into handkerchiefs or sheets.
19. HOW men mine coal, or iron, or tin.
20. HOW mountains, or valleys, or plateaus are formed.
- E. 21. WHY India has monsoon weather, or WHY the weather of the prairies is so extreme.
22. WHY forests grow in some parts of the world and not in others.
23. WHY certain soils favor such plants as coffee or cotton.
24. WHY minerals occur in certain parts of the world.
25. WHY large numbers of fish live in the Newfoundland Banks or in the North Sea.

ANSWER SHEET

Underline
Boy or Girl

Age Years Months

How Interested Are You in These Statements?							How Much Do You Think You Know About These Statements?					
	Very inter- ested	Inter- ested	Unde- cided	Un- inter- ested	Very Un- inter- ested	Leave Blank	A large amount	Quite a lot	Only a moder- ate amount	Very little	Noth- ing	Leave Blank
1.												
2.												
3.												
4.												
5.												
etc. ..												

GEOGRAPHY QUESTIONNAIRE C

Read the following five statements:-

- A. Descriptions of places and people.
 - B. How goods are manufactured or food produced.
 - C. The reasons why certain things happen in particular parts of the earth.
 - D. Where the world's places and resources are.
 - E. The ways in which geographical conditions influence people's lives.
- Now answer questions 1, 2, 3, and 4.

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1. I am MOST INTERESTED in (Insert A. B. C. D. or E.) BECAUSE
(underline the reason which agrees most with what you think).
(i) I have learnt a lot about it in school.
(ii) I have learnt a lot about it in school and found out about it on my own.
(iii) I have found out something about it on my own.
(iv) I do not know much about it but would like to know more.
2. I am LEAST INTERESTED in (Insert A. B. C. D. or E.) BECAUSE
(underline the reason which agrees most with what you think).
(i) I have learnt very little about it in school.
(ii) I know nothing about it.
(iii) I have learnt very little about it on my own.
(iv) I know a lot about it and do not wish to know more.
3. I KNOW MOST about (Insert A. B. C. D. or E.) BECAUSE
(underline the reason which agrees most with what you think).
(i) I have learnt a lot about it in school.
(ii) I have learnt a lot about it in school and found out about it on my own.
(iii) I have found out about it on my own.
(iv) It interests me a great deal.
4. I KNOW LEAST about (Insert A. B. C. D. or E.) BECAUSE
(underline the reason which agrees most with what you think).
(i) I have not learnt about it in school.
(ii) It does not interest me.

TABLE OF RAW SCORES (+5.00 to -5.00)

INTEREST IN LOCATIONAL GEOGRAPHY (A. 1-5)

Grade VI

	Canadian		English	
	Boys	Girls	Boys	Girls
1	.30	1.05	.55	.70
2	1.04	1.02	.55	.20
3	.36	.15	.55	.80
4	.68	1.03	.70	.90
5	.85	1.19	.90	.70
Av.	.65	.89	.60	.65

Grade VII

	Canadian		English	
	Boys	Girls	Boys	Girls
1	.70	.56	.54	.58
2	.52	.36	.35	.25
3	.65	.63	.47	.70
4	.55	.67	.82	1.15
5	1.05	.87	.78	.70
Av.	.69	.62	.58	.65

Grade VIII

	Canadian		English	
	Boys	Girls	Boys	Girls
1	.62	.56	.55	.60
2	.65	.61	.25	.40
3	.45	.52	.30	.65
4	1.02	.90	.75	1.25
5	.97	1.04	.60	.80
Av.	.74	.73	.48	.72

Grade IX

	Canadian		English	
	Boys	Girls	Boys	Girls
1	.71	.84	.45	.50
2	.34	.87	.20	.30
3	.60	.69	.28	.50
4	1.23	1.53	.95	1.20
5	.81	.96	.60	.84
Av.	.76	.98	.48	.66

Grade X

	Canadian		English	
	Boys	Girls	Boys	Girls
1	.25	.83	.45	.48
2	.45	.73	.23	.26
3	1.17	.63	.30	.25
4	1.05	1.10	.98	1.30
5	.60	.70	.85	.70
Av.	.70	.80	.55	.58

INTEREST IN DESCRIPTIVE GEOGRAPHY (B. 6-10)

Grade VI

	Canadian		English	
	Boys	Girls	Boys	Girls
6	.77	.86	1.32	1.25
7	.55	.57	-.05	.20
8	.38	.81	.60	.60
9	.60	1.65	.88	1.42
10	.19	1.59	.50	1.17
Av.	.50	1.10	.65	.92

Grade VII

	Canadian		English	
	Boys	Girls	Boys	Girls
6	.73	.70	1.22	1.25
7	-.15	.18	.10	.10
8	.85	.92	.35	.50
9	.83	1.34	.90	1.40
10	.50	1.20	.45	1.18
Av.	.55	.87	.60	.88

Grade VIII

	Canadian		English	
	Boys	Girls	Boys	Girls
6	1.02	.96	1.15	1.45
7	-.02	.48	-.23	.30
8	.58	.92	.02	.60
9	.95	1.42	.75	1.40
10	.52	1.04	.50	1.18
Av.	.61	.96	.44	.97

Grade IX

	Canadian		English	
	Boys	Girls	Boys	Girls
6	.47	.93	.80	1.40
7	.00	.63	-.04	.20
8	.39	1.03	.20	.60
9	.76	1.60	.72	1.38
10	.05	.93	.40	1.30
Av.	.33	1.02	.40	.95

Grade X

	Canadian		English	
	Boys	Girls	Boys	Girls
6	.65	1.10	.83	1.38
7	-.17	.51	.05	-.05
8	.37	.86	.34	.55
9	.87	1.53	.58	1.18
10	.67	.91	.10	.87
Av.	.48	.98	.36	.78

INTEREST IN GEOGRAPHICAL RELATIONSHIPS (C. 11-15)

Grade VI

	Canadian		English	
	Boys	Girls	Boys	Girls
11	.11	.08	.20	.05
12	.11	.94	.35	.56
13	.44	.57	.50	.46
14	.34	.51	.10	.10
15	.53	.25	.73	.44
Av.	.31	.47	.36	.36

Grade VII

	Canadian		English	
	Boys	Girls	Boys	Girls
11	.35	-.06	.00	-.20
12	.45	.60	.35	.58
13	.90	.38	.33	.30
14	.35	.08	.14	.22
15	.88	.64	.66	.45
Av.	.59	.33	.30	.28

Grade VIII

	Canadian		English	
	Boys	Girls	Boys	Girls
11	.39	.02	-.02	-.15
12	.43	.88	.25	.70
13	.56	.13	.28	.48
14	.33	.30	.29	.36
15	.88	.32	.52	.46
Av.	.52	.33	.24	.37

Grade IX

	Canadian		English	
	Boys	Girls	Boys	Girls
11	.47	-.01	.13	-.38
12	.55	.84	.35	.50
13	1.00	.58	.42	.30
14	.78	.66	.36	.33
15	.78	.57	.68	.34
Av.	.72	.53	.37	.20

Grade X

	Canadian		English	
	Boys	Girls	Boys	Girls
11	.05	-.01	-.20	-.15
12	.37	.80	.15	.20
13	.52	.45	.36	.24
14	.47	.61	.13	.36
15	.42	.20	.59	.22
Av.	.36	.41	.20	.18

INTEREST IN PROCESSES (D. 16-20)

	Grade VI			
	Canadian		English	
	Boys	Girls	Boys	Girls
16	.21	.90	.70	.62
17	.13	1.08	.56	1.26
18	.42	.95	.71	.54
19	1.00	1.06	1.17	.73
20	1.02	1.41	.53	.65
Av.	.55	1.08	.71	.76

	Grade VII			
	Canadian		English	
	Boys	Girls	Boys	Girls
16	.48	.60	.45	.72
17	.53	.86	.43	1.05
18	.95	.76	.67	.60
19	1.40	.38	1.15	.97
20	1.08	.80	.61	.70
Av.	.89	.68	.68	.80

	Grade VIII			
	Canadian		English	
	Boys	Girls	Boys	Girls
16	.32	1.00	.42	.65
17	.30	1.00	.43	1.09
18	.83	.71	.50	.64
19	1.12	.23	.91	.85
20	.65	.92	.42	.50
Av.	.64	.77	.54	.76

	Grade IX			
	Canadian		English	
	Boys	Girls	Boys	Girls
16	.52	.72	.42	.61
17	.42	1.30	.35	.98
18	.78	.74	.55	.51
19	1.26	.46	.90	.82
20	.60	.71	.35	.44
Av.	.71	.78	.51	.67

	Grade X			
	Canadian		English	
	Boys	Girls	Boys	Girls
16	.22	.78	.34	.54
17	.50	.70	.04	.95
18	.77	.46	.50	.49
19	1.20	.68	.94	.74
20	.20	.45	.23	.26
Av.	.58	.61	.41	.59

INTEREST IN SCIENTIFIC REASONING (E. 21-25)

	Grade VI			
	Canadian		English	
	Boys	Girls	Boys	Girls
21	.53	.90	.12	.47
22	1.13	1.41	.42	.64
23	.13	.81	.07	.48
24	.57	.92	.53	.38
25	.59	1.27	.96	.78
Av.	.59	1.06	.39	.55

	Grade VII			
	Canadian		English	
	Boys	Girls	Boys	Girls
21	.18	.30	.20	.54
22	1.33	.84	.34	.59
23	.55	.52	.10	.40
24	1.20	.76	.49	.31
25	1.25	.78	.72	.60
Av.	.90	.64	.39	.49

	Grade VIII			
	Canadian		English	
	Boys	Girls	Boys	Girls
21	.10	.58	.00	.51
22	.66	.81	.22	.57
23	.02	.52	.00	.35
24	.85	.42	.57	.46
25	1.05	1.04	.73	.72
Av.	.54	.67	.29	.51

	Grade IX			
	Canadian		English	
	Boys	Girls	Boys	Girls
21	.87	.85	.28	.53
22	.71	.92	.21	.40
23	.15	.66	.03	.10
24	.81	.73	.38	.27
25	.92	1.04	.52	.68
Av.	.69	.84	.28	.40

	Grade X			
	Canadian		English	
	Boys	Girls	Boys	Girls
21	-.20	.08	-.02	.44
22	.32	.60	-.10	.17
23	.30	.45	-.25	.12
24	.72	.56	.48	.12
25	.32	.48	.30	.65
Av.	.29	.43	.08	.28

In locational geography all ages and both sexes in England and Canada are most interested in where cities are (this interest increases with age) and least in where climate and vegetation is (this often decreases with age). Girls show a greater interest in "where" than boys. Canadians show a somewhat greater interest than English. There is, however, an overall positive interest in location.

In descriptive geography there are some sharp contrasts between the interests of boys and girls and between the interest in one topic and another. Girls like it very much more than boys. Descriptions of scenery on a journey and descriptions of life in various areas are much more interesting than descriptions of vegetation. Canadian and English children give very similar responses. In a few cases the response is negative, and in others very highly positive.

Canadians and English again show a similar reaction to the statements involving geographical relationships. They both show slight interest only. In both countries, too, boys are more interested than girls. In general, however, Canadians are more interested than English. The statement which is really uninteresting to all, especially girls, is that concerning the geographical advantages favouring the manufacture of specified goods in special areas. Girls in both countries show some interest in the effect of climate on houses, whereas boys favour the influence of mountains on roads.

Interest in how things are done shows a distinct decline with age, particularly in England. Canadians, however, maintain a higher interest in these ideas. Girls are generally more interested than boys, particularly in how crops are grown, but boys are more interested in mining than girls.

Girls tend to be more interested than boys in scientific reasons except in the case of mining. Interest also seems to decline with age. In general, interest is not very high and may even be negative. Canadians are naturally more interested in forests and English in fish. Canadians seem a good deal more interested in why things happen than the English.

There is on the whole, an amazing parallelism between the English and Canadian responses. In both countries girls are more interested than boys in geography except for geographical relationships. Girls are most different from boys in descriptive geography. They come closest together in geographical relationships, in which they both have least interest. Boys seem most interested in how things are done whereas girls like to know what things look like. Canadians are most interested in where cities are, whereas the English like to know how folk live. There is very little relative difference in interest in the various topics resulting from age. Age merely shows a general decline in total interest.

Turning now to the response to knowledge of these topics we find that both English and Canadians indicate an increasing knowledge of location with age. English think they know more about it than Canadians. In both countries boys think they know slightly more than girls. Knowledge and interest come closest together under this heading than in any other.

Both English and Canadians think they know a great deal less about descriptive geography than locational. There is also no obvious increase of knowledge with age, moreover boys do not think they know more than girls. Canadian and English children show a very similar estimate of their knowledge.

Both Canadians and English estimate their knowledge of geographical relationships at a low level. Girls are particularly humble. Canadians have a similarly low opinion of their knowledge of how people work but English children seem to think they are quite well informed thereon. Boys in both countries are less modest than girls in estimating their knowledge.

Estimates of knowledge reach their lowest ebb in connection with the "why" statements. There is moreover no great difference between Canadian and English estimates. There seems to be a greater divergence between interest and knowledge under this heading than under any other.

In summary we see that children seem to know most about locational geography even though they have only average interest in it. They know least about scientific reasons and they show no particular interest in them. They show greatest interest in descriptions of "what" and "how" but their estimates of knowledge are but average. Relative but not absolute estimates of knowledge seem similar for all ages.

The main reason for interest seems to involve the statement "I know a little but wish to know more". The main reason for lack of interest is complete ignorance of the topic. Knowledge is apparently highly correlated with school learning rather than primarily with interest.

The results of this test, though more definite than the former, are by no means conclusive. There is still a great difference between the items in any one group, showing that children do not necessarily divide up their geography along these lines, but it seems to be nearer to a useful classification than the earlier attempt. The descriptive elements of geography are clearly much preferred, especially among young children, to the reasoning or relational thinking; in fact, the relational thinking, which we know to be the essence of geography, is at the bottom of the list of preferences.

This study also throws light on the problem of interest. Interest is a receptive frame of mind not an active drive for the acquisition of knowledge. It is by no means the only factor involved in the learning process. Opportunity to learn is the fundamental thing in learning. It is the teachers' job to provide opportunities. Opportunity to know creates interest but this needs added stimulus to make it an active learning process. The effort necessary to acquire knowledge is largely a function of the stimulus supplied by method and teacher.

The potency of interest is often overestimated. It is not to be confused with children's innate urge to be active, or with any inner drive to learn subject matter. Children cannot be left to nature. They do not know what there is to be interested in, and they have no inner or in-

tuitive means of discovering the interest hidden in any subject. Interest is stimulated by external conditions not by internal compulsion. Children always need the guidance and direction of a teacher. Active learning needs the help of external persuasion, for interest is only a willingness to know not the will to know.

This report on a long investigation has shown some surprising results. Not only is there high correlation between the results of various sections of the test, but there is an amazingly high correspondence between English and Canadian children. This tends to imply that the attitude questionnaire is not as invalid as has been supposed and that there is a similarity and permanence about children's interests. Differences of cultural background do not make as great a difference as might be supposed. Greater differences seem to result from different teaching techniques than from social setting. It would, therefore, seem possible to use objective findings, about children's frankly expressed desires and interests, as one means of helping to determine the kind of material to be presented at different levels. And yet the final indication suggests that the exact content matters much less than the difficulty of the ideas and concepts presented and, one may suspect, the method by which the teaching is undertaken. Curricula must, therefore, be based on increasing difficulty of ideas, and subjects must be thought of as biologically growing organisms which develop in complexity, strength and value, not as cumulative masses of data which clog the mind without increasing wisdom.

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